

A HISTORY
OF
THE BIRDS OF EUROPE,

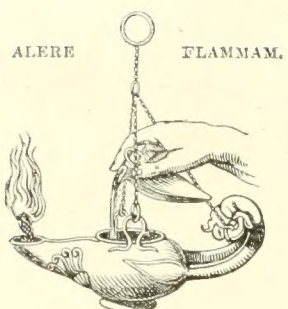
INCLUDING ALL THE SPECIES INHABITING THE
WESTERN PALÆARCTIC REGION.

BY
H. E. DRESSER, F.L.S., F.Z.S., ETC.

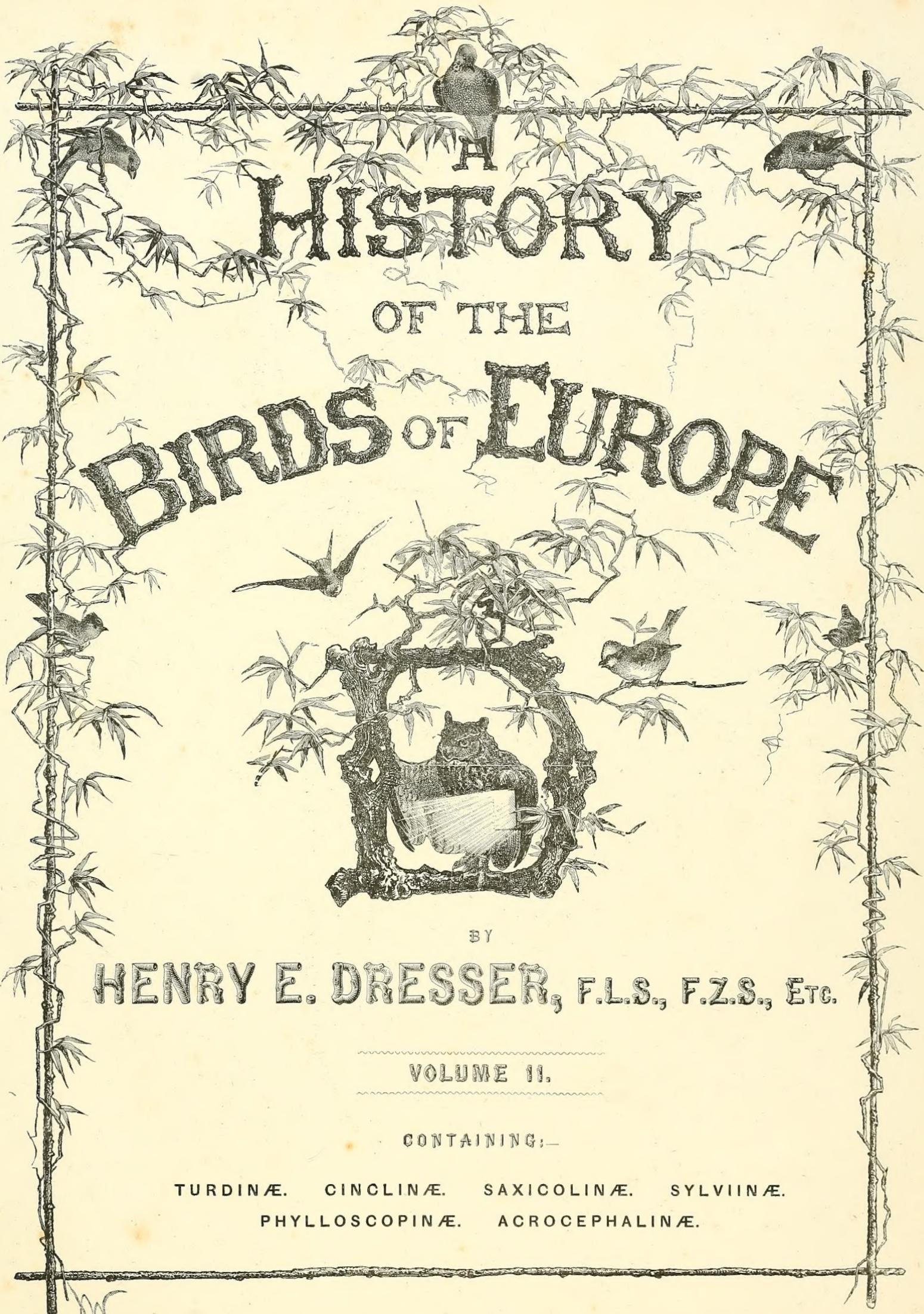
VOLUME II.

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A
HISTORY
OF THE
BIRDS OF EUROPE

BY
HENRY E. DRESSER, F.L.S., F.Z.S., ETC.

VOLUME II.

CONTAINING:—

TURDINÆ. CINCLINÆ. SAXICOLINÆ. SYLVIINÆ.
PHYLLOSCOPINÆ. ACROCEPHALINÆ.

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LETTERPRESS TO VOL. II.

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Class AVES.

Subclass AVES CARINATÆ.

Order I. PASSERES.

Suborder I. OSCINES.

Section I. OSCINES DENTIROSTRES.

Family TURDIDÆ.

Subfamily TURDINÆ.

Genus TURDUS.

- Merula* apud Brisson, Orn. ii. p. 227 (1760).
Turdus, Linnæus, Syst. Nat. i. p. 291 (1766).
Alauda apud P. L. S. Müller, Natursyst. Suppl. p. 137 (1766).
Sylvia apud Savi, Orn. Tosc. i. p. 203 (1827).
Arceuthornis apud Kaup, Natürl. Syst. p. 93 (1829).
Cichlodes apud Kaup, ut suprâ (1829).
Copsichus apud Kaup, ut suprâ (1829).
Oreocincla apud Gould, Proc. Zool. Soc. 1837, p. 136.
Cychloselys apud Bonaparte, Cat. Parzud. p. 5 (1856).
Planesticus apud Bonaparte, ut suprâ (1856).
Iliacus apud Des Murs, Ool. Orn. p. 293 (1860).
Geocichla apud Jerdon, Ibis, 1872, p. 136.

THE present genus comprises all the true Thrushes, and forms a fairly natural group, though one somewhat hard to define sharply, as it merges very gradually into the Warblers, there being scarcely any character by which they can invariably be separated.

Thrushes are found in all the zoogeographical regions and subregions into which the globe has been divided, with the exception of New Zealand.

Within the limits of the Western Palæarctic Region thirteen species of this genus are found, of which six are resident and seven are only stragglers from the Eastern Palæarctic Region. Two American species have also been obtained within our limits, viz. *Turdus migratorius* and *Turdus swainsoni*; but I cannot help thinking that the examples of the former which have occurred are birds escaped from confinement, and, after careful consideration, I do not find it advisable to include either species.

The Thrushes are, as a rule, extremely fine songsters, and are amongst the more highly organized of the Passerine birds. They are omnivorous, feeding on fruits, seeds, insects, mollusca, &c. They build open cup-shaped nests, neatly and carefully constructed, and usually

place their nests on a tree or bush. All our European Thrushes deposit more or less spotted or blotched eggs; but many of those inhabiting other regions, notably several of the small American Thrushes, lay unspotted eggs. All the Palæarctic species are spotted in nestling dress.

Turdus viscivorus, the type of the present genus, has the bill tolerably strong, slightly decurved and notched; gape furnished with a few bristles; nostrils elliptical, direct, in the lower and fore part of the nasal membrane, which is feathered; tarsus covered in front with a long plate and four inferior scutellæ, posteriorly with two longitudinal plates; feet and claws moderately strong; wings rather long, rounded, first quill very small, third and fourth longest; tail slightly emarginate, composed of twelve feathers.

White's Thrush, which I also include in the genus *Turdus*, differs from the other Western Palæarctic Thrushes in having fourteen instead of twelve rectrices.



MISSSEL THRUSH.
TURDUS VISCIVORUS

TURDUS VISCIVORUS.

(MISSEL-THRUSH.)

- Turdus viscivorus*, Linn. Syst. Nat. i. p. 291 (1766).
Sylvia viscivora, Savi, Orn. Tosc. i. p. 208 (1827).
Ixocossyphus viscivorus, Kaup, Natürl. Syst. p. 145 (1829).
Turdus major, Brehm, Vög. Deutschl. p. 379 (1831).
Turdus arboreus, Id. tom. cit. p. 380 (1831).
Merula viscivora, Selby, Ill. Brit. Orn. i. p. 158 (1833).
Turdus hodgsoni, Von Homeyer, Rhea, ii. p. 150 (1849).

Missel-Thrush, *Misseltoe-Thrush*, *Storm-cock*, *Holm-Thrush*, *Fulfer*, English; *Grive Draine*, French; *Tordela*, Italian; *Charla*, *Drena*, Spanish; *Tordeira*, *Tordoveia*, Portuguese; *Malvitzun*, Maltese; *Misteldrossel*, German; *de groote Lijster*, Dutch; *Misteldrossel*, Danish; *Dubbeltrast*, Swedish; *Kulorastas*, Finnish; *Drozd Deryaba*, Russian.

Figuræ notabiles.

Werner, Atlas, *Insectivores*, pl. 11; Gould, B. of Eur. pl. 77; Yarr. Brit. B. i. p. 179 (1843); Naum. Vög. Deutschl. Taf. 66. fig. 1; Kjærb. Orn. Dan. Afb. xvi. fig. 4; Schlegel, Vog. Nederl. pl. 106; Gould, B. of Gt. Br. part xv.; Bett. Ucc. nidif. Lomb. tav. 19.

♂ *ad.* suprâ griseo-brunneus, plus minusve olivascenti-aureo lavatus: tectricibus supracaudalibus dilutioribus pallidè flavicante marginatis: tectricibus alarum minimis dorso concoloribus, medianis brunneis albido terminatis, maximis albido marginatis, extimis aliquot olivaceo lavatis: remigibus brunneis, primariis albido marginatis, secundariis externis aureo, pennis dorsalibus albido, latè marginatis: caudâ cinerascienti-brunneâ, angustè albo terminatâ, rectricibus duabus externis pogonio interno magis conspicuè albo notatis: loris et supercilio indistincto cum regione oculari albidis: genis fulvescentibus, brunneo minutè punctulatis: regione auriculari magis brunnescente, albo longitudinaliter variâ: mento albo: gutture albo paullò fulvescente, maculis parvis subtriquetris brunneis notato: corpore reliquò subtus albido, aureo-fulvo plus minusve lavato, pectore summo maculis magnis subtriquetris nigris ornato, pectore imo maculis subovatis nigris sparsiùs notato: subcaudalibus fulvescentibus paullò brunneo variis: subalaribus purè albis: rostro brunneo, ad basin flavicante: pedibus flavidis: iride saturatè brunneâ.

♀ *ma* similis, vix dilutior.

Juv. suprâ albescens, aureo lavatus et striolatus, fasciis nigris ante apicem plumæ transnotatis: tectricibus alarum remigibusque aureo latè marginatis: uropygio fulvescenti-aureo: rectricibus albo terminatis: subtus albicans læte aureo lavatus, maculis nigris rotundatis ubique notatus.

Adult Male. Above greyish brown, slightly inclining to olive-brown here and there, and very distinctly washed with golden, especially on the rump, where some of the feathers are edged with whitish; least

wing-coverts coloured like the back, the median ones tipped with white forming an irregular alar bar, and the greater ones edged with whitish on the outer margin of the feather, which is in some instances also tinged with golden; quills dark brown, the primaries externally edged with golden, shading into white towards the tip of the feather; the secondaries margined with golden, the innermost ones with whitish; tail greyish brown edged with golden, becoming white towards the tip of the feather, the two outer feathers conspicuously tipped with white, which colour is spread more over the inner web than the outer, the greater part of the outermost feather greyish, more or less inclining to white; the shafts brown above, white beneath; lores and feathers round the eye forming an indistinct eyebrow whitish; ear-coverts and sides of the neck greyish brown, tinged with whitish, and longitudinally marked with darker brown; a faint moustache buffy white with a few little triangular spots of brown; throat white, dotted with little spots of brown, which increase in size towards the breast, and are especially thick on each side of the throat; rest of the under surface of the body white, more or less tinged with buff or golden colour, thickly covered with blackish spots, which are triangular on the upper breast, and oval on the lower part of the latter and the abdomen; under wing-coverts pure white; bill dark horn-brown, yellowish at the base near the nape; feet yellowish; iris dark brown. Total length 11 inches, culmen 0·9, wing 6·0, tail 4·8, tarsus 1·3.

Female. Exactly similar to the adult male, but perhaps not so brightly coloured, and the spots on the breast more brown. We have, however, seen individuals sexed as females which were as brightly coloured as ordinary adult males; and we suspect that, when fully mature, there is no difference between the sexes. Great variation seems to take place with regard to the number and colour of the spots on the breast, some birds having them very black and distinct, and at the same time thinly distributed, while others have them pale brown in colour, and so broad as to have almost the form of bars instead of spots, while they are very thickly collected all over the under surface of the body. The amount of golden shade is also a character which varies much.

Young. Very golden in colour both above and below, and the plumage, more especially of the head and neck, fluffy; head golden-brown, with whitish centres to the feathers, and obscure little spots of black at the extremity of each plume; back more rich golden-brown, the centres of the feathers diamond-shaped and bright golden in colour with black edgings; rump entirely golden, varied slightly with brown, where the bases of the feathers show; wing-coverts also bright golden down the centre, bordered on each side with broad lines of brown; greater coverts brown, edged and tipped with golden; quills blackish, edged with golden, the secondaries more broadly; quills brown, tipped with white; cheeks clear golden with minute spots of brown, which are thickest behind the ear-coverts; lores and a tolerably distinct eyebrow whitish; throat buffy white, bordered on each side by a moustachial stripe of brown; rest of the under surface of the body golden, paler on the abdomen, the breast thickly covered with black spots, which are fewer on the abdomen; under wing-coverts whitish, slightly marked with brown spots on the edge of the wing.

Obs. The full-grown young bird loses most of the golden colour which renders it so beautiful in the nestling-plumage, and becomes much bleached, so that the head appears dirty white, and the blackish tips to the feathers are more plainly seen. The diamond-shaped centres to the feathers are also much contracted, and become longitudinal shaft-streaks; and the same is the case with the wing-coverts. On the breast, which is dull white in colour, the spots are very small. It would seem as if the adult plumage were assumed by a changing of the feather and by a direct moult at the same time; for we have specimens before us which show that the brown coloration of the upper surface is assumed by the gradual narrowing of the golden centres to the feathers, till they become obliterated, and the plumes are left entirely pale grey brown; but the breast changes by a moult, and the new feathers have very

large spots, and are beautifully golden in colour. The young bird figured in the Plate is nearly mature, but still has golden shaft-stripes to the upper plumage. We do not think this stage of the bird has ever been illustrated before.

THE Missel-Thrush, or, as it is often called, the Misseltoe-Thrush, is found in nearly every part of Europe, being, however, migratory to a greater or less extent. It does not seem to have been met with in Siberia, but ranges into the Himalayas, where it has been supposed to constitute a distinct species. After having examined a very complete series from all localities, we desire to record our opinion that the Missel-Thrush of the Himalayas is in every respect exactly similar to the Missel-Thrush of Europe; and we are certain that any one working with a sufficiently full series of skins before him will indorse this statement.

It breeds everywhere in England, according to Mr. A. G. More, who appends the following remark:—"apparently still increasing in Scotland, as it is now recorded as breeding regularly even in the most northern counties." For the very interesting note on the Missel-Thrush in Scotland given below we are indebted to Mr. Robert Gray, of Glasgow, while our friend Mr. J. A. Harvie Brown has also kindly sent us the accompanying observations:—"This still remains a comparatively rare species so far north, though spreading steadily through Sutherland and Caithness with the advance of wood and cultivation. In 1834, Mr. Selby writes that it was observed about the banks of Loch Naver; but this year (1869), though we wrote to a correspondent in that neighbourhood, we failed to obtain the eggs. Mr. J. Crawford, however, is confident that the Missel-Thrush breeds about Tongue, as the birds are constantly observed in summer. We obtained one egg in 1869, however, from a much more northern locality, in Caithness. Even in 1865 Mr. A. G. More records it as breeding and increasing as far north as Caithness. Since the above was first penned we have seen eggs taken close to Cape Wrath." "In England," writes Mr. J. H. Gurney, jun., "the Missel-Thrush is one of those birds which, like the Turtledove and the Long-eared Owl, are increasing with fir-plantations. The remark of Selby, 'this species within the last ten or fifteen years has become very common in the northern counties,' will apply to many other places." In Ireland, also, it is a very common bird.

In Norway, according to Mr. R. Collett, it is "chiefly found in the south-eastern portion of the country, where it generally winters, and also breeds. It becomes rare in the province of Christiania, at Nedernæs, near Næs, and Aaseral, and is not known with certainty to occur in the province of Bergen. Above Mjæsen it is rarer, but breeds in Gudbrandsdal, at Lillehammer, has been observed at Trondhjem, in the Værdal; and Mr. Godman found it breeding near Bodö, on the 6th of July, 1857. A single individual was observed at Alten, below 70°, in August 1838, by Professor Sundevall." Wheelwright found a nest, containing fresh eggs, at Quickjock, in Lapland, on the 9th of July, where, however, the bird is rare. The late Mr. John Wolley, in his 'Sale Catalogue' of May 30, 1860, for a sight of which we are indebted to Mr. J. H. Gurney, jun., says it is "by no means abundant in Lapland, but still, as shown by their eggs [from Kyrö], extending its range higher than lat. 68° N." Von Wright says that it is found generally throughout Finland, though nowhere numerous, and seldom does one remain over winter. Mr. A. Benzon writes:—"This bird is common during migration, but is more rarely found nesting in Denmark. It breeds here and there in the woods, both on the peninsula and the islands. I have its eggs from Jutland and the neighbourhood of Copenhagen. It lays its eggs in the latter part of May."

Meyer says that in the Baltic provinces it is "found in pine-woods, but is rarer than the other Thrushes, migrating southwards in winter." In Germany it is plentiful; and Dr. Finsch informs us that he found it breeding in colonies in the Riesengebirge and Silesia. Mr. H. M. Labouchere writes to us:—"The Missel-Thrush only visits Holland in autumn on its way south; a few instances, however, are on record of this bird having bred in the province of Groningen; but this is a very rare occurrence." In Belgium, De Selys-Longchamps gives it as "rare, and occasional on passage from late in the autumn to the early part of the spring: migrates singly." Krøner says that in Alsace it is "resident from April to September on the mountains and plains. This Thrush, which inhabits by preference more northern countries, lives equally in the forests of fir on the Vosges, as well as in the pine-forests of Gendertheim." According to Degland and Gerbe, it is "common in France, stationary in the south, and migratory in Provence and Lorraine; some, however, are also sedentary in the north of France." Bailly records it as "sedentary in Savoy, although a certain number leave us in the autumn in families or small flocks." Mr. Howard Saunders writes to us:—"In Southern Spain this species has only come under my notice from October to April, and a large portion evidently continue their journey southwards; it probably breeds sparingly in the mountains, and it certainly does so north of the Sierra Morena, whence I have eggs. I also found it nesting in Aragon;" and Major Irby sends us the following note:—"In one instance this species nested near Gibraltar, but is chiefly migratory, arriving in October, and is not very common." In Portugal it is plentiful, according to Professor Barboza du Bocage. In Italy it is also abundant, and breeds there; and Malherbe writes:—"Not common in Sicily, where in the winter it is found on the plains, in the gardens, and on the small hills. In spring it proceeds to the wooded mountains to breed. It nests near Messina, in the forest of Fiumedinisi." Mr. C. A. Wright, in his List of the Birds of Malta, states as follows:—"A specimen was procured by me on the 1st February, 1861, and another by Mr. J. Horne on the 2nd December the same year. I obtained a third in the winter of 1862, and two others in the autumn of 1863." Loche says it is "not common in Algeria, and probably only found during migration." Mr. Osbert Salvin writes:—"On passing through the Waregra country, near the Tunisian frontier, I shot several of these birds, and saw others." In Tangier and Eastern Morocco, Mr. C. F. Tyrwhitt Drake says it is very common.

Lord Lilford observes that it is "not very abundant in Corfu and Epirus in the winter, but more so in Continental Greece." Lindermayer says that in Greece it is rare in the south of the country in winter; but Von der Mühle records it as breeding in the high mountains of Rumelia. Messrs. Elwes and Buckley found it common in Turkey; and Mr. Robson writes to us from Ortakeuy:—"This species is numerous in Turkey and Asia Minor, and quantities are shot by sportsmen for the table in winter. In the middle of October numbers arrive, and pass into Asia Minor in flocks, repassing into Europe in the beginning of April; many stay over the winter and feed on the berries of the mountain-ash, ivy, &c. They also feed in small flocks on mountains and plains, eating grasshoppers, larvæ of insects, &c. In summer they are rarely ever seen away from the large woods, which they continue to inhabit and there bring up their young. Many of these birds are much more spotted than others and of a much darker yellow, and correspond with varieties found in the north of England in winter. They are never seen in summer in the parks and cultivated grounds near the Bosphorus." The late Mr. Strickland found it near

Smyrna during the winter. Professor von Nordmann states that "in the Crimea and near Odessa it is often found in considerable numbers during the migration in spring and autumn. It winters in the neighbourhood of Odessa." Mr. H. Goebel also observes that it passes "regularly through Uman, in Southern Russia, in March and September or October. A few remained during the winter of 1869-70." Ménériés killed it "often enough on the mountains of Talyche in the month of June;" and Lehmann met with it at Orenburg.

We now come to India, where the bird has been called *Turdus hodgsoni*; but the differences mentioned by Dr. Jerdon below do not hold good. The last-named author writes, in his 'Birds of India':—"This bird, which so closely resembles the Missel-Thrush of Europe, has been separated on account of its large size; the bill is longer, the colour less rufous above, and less tinged with ferruginous beneath, and the throat and breast are also less streaked. It has only been taken in the N.-W. Himalayas. Specimens from Mussoorie and Kumaon are in our museums. I did not procure it in Sikkim." Colonel Tytler, in a letter to 'The Ibis' for 1869, describes the young of *Turdus hodgsoni*; but we have been able to match his descriptions with English specimens. He next proceeds:—

"The resemblance which this species bears to the European *T. viscivorus* is very great; but there is a decided difference between the two species. For instance, a young male of the European bird in my collection, to all appearance about the same age as No. 1 above described, is of a much lighter and more rufous brown than the Indian; the head also is more considerably albescent, as is the upper part of the back; and both are dotted with blackish brown, darkest on the back. There is also a well-defined dark superciliary streak, of which the Indian specimen has no trace. In the European bird the secondaries and some of the other wing-feathers are broadly edged with rufous white, and the flanks are strongly tinged with rufous, which is not the case with the Indian species. Even in the adult female there is a striking difference between the two birds; for an example from France of that age and sex has the edge of its wing-feathers white, the spots on the lower surface extend almost to the chin, and there is a decided rufous tinge on the flanks, whereas in *T. hodgsoni* the throat and chin are white, and the rufous tinge on the flanks is entirely wanting.

"I have had several opportunities of observing this species, and have always found it on hills well covered with forest trees. The moment the birds are disturbed, they utter a peculiar note, which appears to be taken up by others, should there be any more about. They are not at first difficult to approach, but when fired at become exceedingly wild. The young, while following their mother, extend and keep constantly flapping their wings, keeping up all the time an incessant calling; but the moment they are disturbed by a shot being fired at them, they conceal themselves among the branches and leaves, and are with the greatest difficulty discovered." Major Irby found the Missel-Thrush common in Kumaon; and Dr. Leith Adams, in his paper on the Birds of Cashmere, writes as follows:—"In the lower and middle regions of the Western Himalayas, common; plentiful in the forests of Cashmere; pretty common in the forests and in sequestered valleys of the Cashmere ranges, particularly pine or oak forests."

The following is Mr. Robert Gray's note on the Missel-Thrush in Scotland:—"During the last thirty years there has been a gradual increase of the numbers of this species throughout Scotland. So recently as 1830 it was rather an unusual circumstance to find a Missel-Thrush

breeding in any locality north of the Tweed. Now, however, it is very common almost everywhere, extending, as I am informed by Mr. Brown, to the counties of Sutherland, Ross, and Caithness. At first its breeding-haunts were wholly confined to gardens and private avenues, where a variety of tree-shrubs afforded it a suitable site; but at the present time the nest is found as often in woods and parks as elsewhere. I have frequently observed the bulky structure placed at some distance from the ground, but always near the main trunk of the tree, or on a strong branch, without much regard to concealment. At other times it may be seen within a few feet of the base and within reach of prowling animals, which generally manage in such cases to destroy the young ones before they quit the nest. The materials of which the nest is composed vary greatly. I have many times influenced the birds in their choice by throwing in their way a quantity of wood, or paper shavings, moss, or even dried ferns, and have been amused with the readiness with which they took advantage of what had been placed within their reach—handfuls of loose materials being carried away in a few hours, and firmly interwoven by the birds. The nest is much shallower than that of the Common Thrush; and this makes the bird very easily detected when sitting. As soon as the eggs are hatched, the female becomes very bold in defence of her young, and strikes vigorously at any prowling cat or schoolboy venturing near the nest. The male on such occasions is at no great distance, and soon joins his mate, the two making rapid sallies, brushing within a few inches of the offender, and making all the while a harsh grating noise. I recollect seeing a pair of Missel-Thrushes defending their nest against the repeated attacks of two Crows that made a determined assault. The nest was situated in a larch-tree; and one of the Crows, after making the first attack, flew off to some distance, followed by the disturbed Thrush. The second Crow then pounced on the defenceless young, and would no doubt have soon destroyed them, had not the other Missel-Thrush come to the rescue. Both the Missel-Thrushes then beat off their black assailants, buffeting them with great determination. I was very much interested with the sight, and was glad to see the Crows so gallantly repulsed. About the middle of June the young birds become gregarious, and haunt grass-parks, where they pick up snails and other animals, on which they feed. I have seen flocks of twenty or thirty birds collected in this way in various parts of Ayrshire. On being disturbed they flew at once to the nearest wood, where they had been probably hatched. Messrs. Baikie and Heddle state that this species makes its appearance occasionally in Orkney after strong easterly gales.”

The best account of the habits of the Missel-Thrush appears to us to be that of Macgillivray, which we reproduce as follows:—

“The Missel Thrush is a permanent resident, but the native birds of the species are supposed to be joined by others from the Continent towards the end of October. They fly about in loose flocks, composed of a few individuals, seldom more than twenty, and at this season betake themselves to the open fields, especially those recently ploughed, where they search for worms, larvæ, and seeds. On alighting, the bird stands for some time with the body and tail inclined, the head raised, the wings slightly drooping. Should it descry symptoms of danger, it alarms its companions by a low harsh scream, when they all remain attentive for a while, and fly off, or, should they judge themselves safe, commence their search, in prosecuting which they scatter about more than the Fieldfares or Redwings. If you watch the motions of one, you see it hop smartly along, stop to pick up an object, then resume the attitude of attention, hop forward, dig up a worm,

break it to pieces, and swallow it, then stand again, and thus continue until satiated or put to flight. In this manner, which is precisely that of the Fieldfare and Common Thrush, they continue feeding for hours, unless disturbed, generally keeping at a considerable distance from each other, so that two can very seldom be shot at once. They are extremely vigilant; and the moment one is alarmed it emits a low *churr*, which is repeated by the rest, when they either fly to the trees in the neighbourhood, or flit to a distant field. In an open place, they hardly consider themselves safe at the distance of two hundred yards; and although they remain while a person passes them, they fly off if he stands to watch them. When perched on trees they seldom allow a nearer approach than a hundred yards. If they are feeding near a low wall, you may occasionally obtain a shot by going to the place and suddenly starting up, but you have little chance of catching them unawares by slowly raising your head and gun between the stones. I once shot a fine specimen in a field near Edinburgh, through a hole at the bottom of a wall, just as, having observed me, it was about to fly off.

“The Missel Thrush, during winter and spring, is thus more vigilant and suspicious than even the Fieldfare, and, for this reason, as well as because it is much rarer, is seldom shot. It sometimes associates with that species in the fields, but rarely flies with it. Its flight, which is rather heavy, is performed by a series of flappings, with short intervals of cessation, like that of the Fieldfare, and has very little undulation. On occasion, however, it becomes rapid; and when at full speed, a Missel Thrush bears a considerable resemblance to a Sparrow-Hawk or Merlin; and small birds are sometimes seen pursuing it as they are wont to fly after a bird of prey. It is seldom that the individuals of a flock fly low or close together. While proceeding, they now and then utter a low scream; and when they find an eligible place, they either alight abruptly at a distance from each other, or fly over the field for some time.

“The song of this bird resembles that of the Blackbird; but its notes are less mellow and modulated, although equally loud. It commences very early in spring, or even in winter, when the weather is fine, and is continued until the middle of summer; but, as the species is comparatively scarce in most parts, it is seldom heard—and when it is, is usually mistaken for that of the Blackbird or Song Thrush. Several individuals have heard it sing when flying from one place to another; but on such occasions I have only heard it utter its harsh scream.

“The flocks break up in March; and about the end of that month, or towards the middle of April, the different pairs commence their building-operations, selecting a natural wood, a plantation, or frequently an orchard, for their summer residence, whence they make excursions into the neighbouring fields and gardens. The nest, which is placed in the fork of a tree, or on a branch, generally at an inconsiderable height, is very bulky, and more rudely constructed than that of the other species which build with us. It is composed externally of twigs, straws, and grasses of various kinds, intermixed with leaves and mosses; within this is a rudely formed cup of mud, generally in pellets, mixed with grass or fibrous roots. The interior is a more carefully arranged layer of finer grasses, roots, and moss, or frequently of grass alone. Sometimes the exterior is partially covered with grey lichens and mosses; but at other times it is similar to that of the Blackbird's nest. The internal diameter of one now before me is four and a half inches, its depth two and three-fourths, and the thickness of its walls an inch and three quarters. The eggs, usually four, or from three to five, are of a regular oblongo-oval form, an inch and three

twelfths in length, by ten twelfths, flesh-coloured, or purplish white, marked with irregular scattered spots of light brownish red and more obscure spots of purplish red.

“Two broods are generally reared in the season; and the young of the first nest keep together, or even unite with those of other nests, so as to form small flocks. As an instance of the early flocking of Missel Thrushes I may mention that on the 25th of June, 1837, I saw seventeen of them flying over the fields in the evening, and settling on some tall trees, in the neighbourhood of Craigmillar Castle, near Edinburgh. By the middle of September, large flocks are generally met with; and during that month and the following they eat great quantities of the berries of the Mountain Ash and Service Tree. Even in the breeding-season they are shy, although then it is not so difficult to approach them when in the fields, and still less so if you have discovered their nest. They defend their eggs and young with great courage, drive off the Magpie and other suspected birds, and even assail the Sparrow Hawk, although not always with success.

“The food of the Missel Thrush consists, in summer, of earthworms, larvæ, gooseberries, raspberries, and insects; in autumn of geans or wild cherries, rowans, moor berries, worms, and snails; in winter and spring, of haws, snails, worms, and especially seeds of oats, wheat, and other plants. In the latter seasons it keeps in the open fields, very seldom betaking itself to gardens, unless during a protracted snow-storm, when it searches the hollies and hedges for berries, and drives off the other Thrushes which may betake themselves to the same places.

“‘The Missel Thrush,’ says Mr. Weir, in a communication dated 21st March 1837, ‘is the earliest songster of the spring. Even on those cold and rainy or snowy evenings in which all the rest of the musical tribe are mute, we hear him, perched on the top of some high tree, pouring forth his strong, shrill, monotonous song. It is not generally known, at least I do not recollect of having seen it mentioned in books of natural history, that the Missel Thrush is one of the most voracious of our native birds. Having shot all the Magpies and Carrion Crows which infested my immediate neighbourhood, I could not conceive for a long time what had been the cause of the destruction of so many young birds and eggs, until I observed one of them flying out of a nest in which he had been carrying on his murderous operations. As I was passing by Balbairdie Loch, I saw one flying with something in its bill. It was, I suppose, a young Hedge-Sparrow, as the robber was keenly pursued by an old one, which attempted again and again to make it drop its prey, but, alas! to no purpose; for it carried it off to its nest, where it no doubt afforded an agreeable repast to its greedy young ones. One forenoon, when going to my garden, I looked into the nest of a Thrush which was built on the branch of a small spruce tree a few feet from the ground, and contained four young ones nearly fledged. Having returned in the course of a few hours I again peeped into it, when, to my astonishment, I beheld one of them severely cut in the breast and almost at the point of death. I could not imagine what had been the cause of this sudden catastrophe. The gardener, however, told me that, whilst he was watching his bees, he heard the male and female thrushes setting up the most doleful screams. He immediately ran to the spot in the expectation of seeing a cat or a weasel; but in place of them he beheld a Missel Thrush in the very act of killing one of their brood. So determined was it in carrying into effect its daring attempt at murder that he got within a few yards of it before it observed him. A few days after this, the same person, in company with a friend,

observed another Missel Thrush carrying a bird in its bill to its nest, which was built in the cleft of a tall plane-tree, within a few yards of my pigeon-house.'

"Another very interesting communication, dated 5th January 1838, refers to the number of times which this species feeds its young in the course of the day. 'At the extremity of the lowest branch of a spruce, within thirty-three yards of my dwelling-house, about the middle of May 1837, a pair of Missel Thrushes built their nest. In the erection of it they were so exceedingly cunning that, although people were in the habit of passing and repassing by it almost every hour in the day, it was not discovered until the female had been sitting for a week upon her eggs. From my drawing-room window, with an excellent perspective, on Wednesday morning the 14th of June, I began to watch them whilst they were feeding three ripe young ones.

"At twenty minutes past four o'clock they commenced the labours of the day. From that time until five o'clock they fed their young only five times; from five to six o'clock three times; from six to seven o'clock six times; from seven to eight o'clock twelve times; from eight to nine o'clock six times; from nine to ten o'clock four times; from ten to eleven o'clock five times; from eleven to twelve o'clock four times; from twelve to one o'clock three times; from one to two o'clock three times; from two to three o'clock three times; from three to four o'clock two times; from four to five o'clock two times; from five to six o'clock two times; from six to seven o'clock five times; and from seven to eight o'clock only once. During this last hour it rained very heavily, and there was a good deal of very loud thunder. At twenty minutes past eight o'clock they ceased from their operations, having fed their brood only sixty-six times during the day.

"To their young they brought in each time several large worms and snails. Before they did so, however, they generally alighted upon two or three trees, remaining some seconds upon each of them, and looking around with the greatest jealousy and circumspection. In the defence of their brood they were very bold; for no sooner did a Magpie make its appearance than they immediately attacked it, and did not desist until they put it to flight. Except once or twice, they swallowed the whole of the droppings of their family.

"In this neighbourhood, during autumn, they assemble in large flocks. On the 11th of August 1837, on the estate of Sir William Baillie, Bart., of Polkemmet, about two miles from Bathgate, I saw about seventy of them flying and feeding in the same way as the Fieldfares; and on the 8th of September, near my house, I observed another large flock of them.'

"This species has obtained its common name from its being supposed to feed by preference on the berries of the misseltoe (*Viscum album*), a curious parasitic plant, abundant on apple and other trees in many parts of England, but extremely rare in the south of Scotland, and, I believe, not found in any other part of that country. According to Pliny, the misseltoe will not grow unless from seeds that have passed through the intestines of birds, especially Thrushes and Wood Pigeons; and many authors have adopted the erroneous notion that the bird of which we treat is its principal disseminator. Montagu, however, discredits the necessity of the seed's passing through the body of a bird in order to fit it for germinating, and remarks that, although it may germinate after so passing, this is no more wonderful than that corn should grow when voided whole by a horse. 'Such a preparation,' he asserts, 'is no more necessary in the one case than the other, but may be considered as one of the methods nature takes to disperse the seeds

of various plants.' Now, although I have opened many hundreds of berry-eating and seed eating birds, among which were probably sixty or more Thrushes of various species, I have never, but in two instances, which have been already mentioned, found an entire seed in the intestines. The gizzard of the Thrushes is sufficiently powerful to grind into a paste the seeds of any fruit which they might eat; and I do not believe that nature ever uses this method of dispersing plants, simply because no person has ever actually observed seeds to germinate after being passed by birds, because seeds could escape from the action of the stomach only in carnivorous or piscivorous species, and by no means in frugivorous or granivorous, whose gizzards act like millstones, and, lastly, because mere fancies ought on no account to be admitted as facts."

The late Mr. Charles Waterton has also given an account of the present bird, from which we make the following extracts:—

"Should it be the case, in ornithology, that Nature has ordered the male to sing his female to repose, there are some exceptions to the supposed general rule. I may adduce the Stormcock by way of example; for he warbles nearly the year throughout. I have often heard him pour forth his wild and plaintive notes in the months of August, October, November, and December, and in every following month, until the sun has entered into Cancer, at which period he seems to unstring his lyre for a few weeks. Towards the close of December his song is particularly charming; and it becomes more frequent as the new year advances. I remember well (indeed, I noted down the circumstance) that on December 21, 1827, his carol was remarkably attractive. He warbled incessantly from the top of a lofty elm, just as the poor from a neighbouring village were receiving corn under it, in memory of St. Thomas the Apostle. In the olden time, it was a common practice throughout the land to distribute corn to the needy on the day in which the festival of this glorious saint is kept. At present the good dole seems fast approaching to its latter end. Probably in a few years more it will fall a victim to the times, and be trodden under foot in the modern march of intellect.

"This bird, though usually known by the name of the Misseltoe-Thrush in many parts of England, is invariably called the Stormcock by all the lower orders in our neighbourhood,—not that it delights in storms more than in fine weather, but that Nature has taught it to pour forth its melody at a time of the year when the bleak winds of winter roar through the leafless trees. Should, however, a few days of calm and warmth succeed to the chilling blast, then the Stormcock is heard to sing, if any thing, more sweetly than before.

"The Stormcock is a decided inhabitant of trees, except sometimes when in quest of food; for at that time he may be seen on the ground, and in berry-bearing shrubs. But in shrubs I have never been able to find his nest, which is generally placed either in the forked branches of the forest trees, or in those of the larger fruit trees, sometimes very high up, and sometimes within 5 feet of the ground. The outside of the nest is composed of dried grass, to which is added a little green moss; whilst the inside contains a lining of dried grass alone, on which the female commonly lays five eggs, speckled over with chocolate-coloured spots, of a lighter and a darker shade, on a greyish green ground.

"During the period of the breeding-season, the habits of the Stormcock undergo a noted change. At other times of the year, except in cherry-time, and when the seeds of the different species of the service tree are ripe, this bird carefully avoids the haunts of man; but no sooner

does the time arrive in which it has to make its nest, than it draws near to our habitations with the utmost confidence, and forms its nest in places the most exposed to our view. There both male and female protect their charge with matchless courage. On the approach of an enemy you immediately hear their singular cry, which somewhat resembles the sound produced by striking the teeth of a comb smartly with your finger; and you see the parent birds dashing incessantly at the Crow, the Cat, or the Magpie, until they clear the coast. This year there is a Stormcock's nest within fifteen yards of the place where the masons are at work. Our tame Magpie, which is allowed its freedom, and the use of its wings, seized the female, some days ago, and brought her close to the masons. The male bird instantly came up, and rescued his mate, by fighting the Magpie, until he made it let go its hold. '*Causa viæ conjux.*' It was to save his female that he advanced so undauntedly into the midst of his mortal enemies: nothing else could have induced him to face the danger. I fancy that I hear him say—

—— “*‘Si fata negant veniam pro conjuge, certum est,
Nolle redire mihi: letho gaudete duorum.’*”

‘If you won't give my poor dear up to me, here I stay: you may kill us both.’ This loving couple retired triumphant to their nest; but the female lost half of her tail in the fray.

“The Stormcock surpasses all other Thrushes in size, and is decidedly the largest songster of the European birds. He remains with us the whole of the year; and he is one of three birds which charm us with their melody during the dreary months of winter, when the Thrush and the Lark are silent, and all the migratory birds have left us, to sojourn in warmer climates. On this account I prize him doubly. He appears to be gregarious in the months of August and September. I have occasionally counted from forty to fifty of these birds in a flock; and I suspect that they are sometimes mistaken for an early arrival of Fieldfares, by those who pay attention to the migration of birds.

“The Stormcock is remarkably fond of the berries of the mountain-ash. He who loves to see this pretty songster near his dwelling would do well to plant a number of mountain-ashes in the midst of his pleasure-grounds: they are of quick growth, and they soon produce an abundance of berries.”

Thompson, in his ‘Birds of Ireland,’ says:—“The nest is generally most conspicuous; almost every one that I have seen was placed in the forking of the main stem or chief branches of trees, whether these were wholly bare or clothed with cryptogamic vegetation; but they are sometimes situated eight or ten feet from the main stem, particularly on the branches of firs. Trees in young plantations, rising from twenty to thirty feet in height, are often selected. May it not be in some degree to counterbalance the danger to which its nest is subjected from the exposed site (selected according to the dictates of nature), that this bird is endowed with the extraordinary courage and perseverance manifested in its defence? Often have I seen a pair of these birds driving off Magpies, and occasionally fighting against four of them. The pair to which the first-mentioned nest belonged, attacked a Kestrel, which appeared in their neighbourhood when the young birds were out, although probably without any felonious intent upon them. One of these Thrushes struck the Hawk several times, and made as many more attempts to do so, but in vain, as the latter, by suddenly rising in the air, escaped the coming blow. This pair

of birds followed the Kestrel for a great way, until they were all lost to sight in the distance. In the wood of Cultra I was once (at the end of April) witness to a single Missel-Thrush boldly attacking a Kestrel, which fled before it. The courage of the Thrush was further evinced by its flying to the summit of the highest pine in the plantation, from which commanding site it for a long time proudly looked defiance against all comers; but by superior numbers Missel-Thrushes are, like their betters, sometimes overpowered. This happened at the Falls on one occasion, when a pair of Grey Crows (*Corvus cornix*) joined, or it may be followed in the wake of, a pair of Magpies in their assault on a nest, and the Thrushes were unfortunately routed. A pair of these birds which bred at the residence of a gentleman of my acquaintance near Belfast, in the summer of 1837, flew angrily towards himself whenever he walked in the direction of their nest. But the Missel-Thrush can exhibit boldness without its nest being attacked. At the end of June 1848, a friend brought from Scotland to his residence, near Belfast, four young Peregrine Falcons. The first day that these birds, then full-grown, were placed out of doors upon their blocks contiguously, four in a row, they were assailed by a Missel-Thrush, which for several hours continued dashing down at them, and all but, if not actually, striking them occasionally. No reason, such as having a nest in the vicinity &c., could be assigned for the Thrush's inhospitable welcome to the Scotch Falcons."

To our friend Mr. Harry Blake-Knox we are indebted for the following note:—"The Missel-Thrush in Ireland breeds quite as much away from human habitation as in its proximity. The ivy seeds, and no doubt others, pass uninjured through it, and germinate often where they fall; in true seed-eating birds this of course could not occur. I am almost positive it is not a migrant to this country; even in the hardest winter it does not flock, excepting in the case of the parents and young. Snow affects it severely, making it mope, when it falls an easy prey to the young gunner. Its song begins in January, though sometimes I have heard it in December."

Mr. Sterland gives the following observations on the Missel-Thrush in his 'Birds of Sherwood Forest':—"The reputed favourite food of this Thrush, the berries of the misseltoe, is most abundant in the district, growing chiefly on the whitethorn. I have no doubt that the Missel-Thrush assists greatly in the propagation of this curious parasite. I used to think the idea of the seeds germinating after passing through its stomach a mistaken one; for I conceived that the action of the gizzard and stomach would effectually destroy all their vitality; but in this I must confess myself mistaken. Its agency as a disseminator of the plant is exercised also in another way. The berries are exceedingly viscid, and the seeds frequently cling tenaciously to the bill of the bird, who, to rid itself of them, is compelled to rub its bill on the bough of a tree; and thus the seeds are unwittingly placed in the best position for germination, in the clefts and crevices of the bark."

The following account of the breeding-habits is taken from Mr. Hewitson's well-known work on British birds' eggs. He writes, "I know of no bird that seems at times to have so little idea of concealing its nest as the Missel-Thrush; it is sometimes scarcely possible to pass by it without discovery; it is formed of large quantities of straw, matting stolen from the garden, wool, and grass, which are frequently left dangling down on all sides, as though the nest had been torn to pieces; a little moss is sometimes used; it is then cemented with mud, and afterwards lined with fine dry grass. I have seen a nest of this bird, the foundation of which was mud, strongly

cemented to, and nearly encircling, the branches between which it was placed. Mr. Bond says that he has known the Missel-Thrush to again lay its eggs in the same nest in which it had successfully reared a brood of young ones.

“I had always believed that the Missel-Thrush deserved the character which it has obtained of quarrelsomeness and pugnacity, until I have become better acquainted with its history. Wherever its nest is, there its harsh querulous cries may be often heard. During the breeding-season it is the most persecuted bird that lives. It is kept in perpetual turmoil, and, well for it, it is possessed with courage. Its eggs are constantly sucked both by the Jackdaw and the Corby Crow; and if it should succeed in defending them by its intrepidity till they are hatched, its young are the epicure’s bit of the same Crow and Jackdaw, and even tempt the Rook to become raptorial. When I saw the Missel-Thrushes making their nests here, as they do every year, high up, forty or fifty feet above the ground, and midway upon the horizontal branches of some lofty cedar trees, I thought how securely they were placed; and so they were from terrestrial foes; but, called out as a witness to the murder by the pitiless cries of the poor persecuted Thrushes, I have had the mortification of seeing their young ones carried off year after year with a loud croak of satisfaction by their demon foe the Corby Crow. Out of a dozen nests which I have noticed upon these trees, the young from two only have escaped.”

The following curious instance of supposed relations existing between a Common Song-Thrush and the present species was communicated by Mr. J. H. Gurney to the ‘Zoologist’ for 1869 (p. 1847):—“In April last, about the middle of the month, a pair of Missel-Thrushes commenced building in a large oak in a garden at Tottenham. On the 16th of April I observed one of these Thrushes endeavouring to carry up to its nest a piece of white paper as large as half a sheet of full-sized note-paper; but the wind was high at the time, and interfered with the bird’s efforts, and, after repeated trials, it at length abandoned the attempt. After the hen bird had commenced incubation, the male became very noisy and pugnacious, driving off every other bird which settled on the oak in which the Thrushes had built. On the 3rd of May the Missel-Thrush disappeared, having probably been shot or captured by a bird-catcher. On the morning of the 5th or 6th of May the hen Missel-Thrush (who had continued her incubation, notwithstanding the loss of her partner) was observed in company with a Song-Thrush on an adjacent grassplot; they were subsequently frequently observed to consort together whilst the Missel-Thrush was bringing up her young: and once the Song-Thrush was observed to fly into the oak containing the Missel-Thrushes nest with food in its bill. After the young Missel-Thrushes had begun to fly, their mother and the Song-Thrush were still frequently observed in company; and as late as the 9th of June I carefully watched through a glass the old Missel-Thrush, two young Missel-Thrushes, and the Song-Thrush all sitting together within a yard of each other on some iron rails which divided the garden, in which the nest was situated, from an adjacent field.”

We have translated the accompanying story, told by Monsieur J. Vian in the ‘Revue et Magasin de Zoologie’ for 1865 (p. 131); and we beg to call the attention of field-naturalists in this country to the facts stated by the above-mentioned author, to see if any of them have ever met with a like occurrence:—

“The association of these two birds (the Missel-Thrush and Chaffinch) may perhaps appear an anomaly to many naturalists; but I place their classification on one side, in order to speak of the

companionship that nature seems to have established between them. Country children, and those who seek for nests in the environs of Paris, are aware of the fact that the Missel-Thrush and the Chaffinch nest in company. Should there be on one tree the nest of a Missel-Thrush, on the same tree or on the nearest there will be found at the same time the nest of a Chaffinch. This reciprocity does not always take place, because in spring in our neighbourhood there are many more Chaffinches than Missel-Thrushes, so that the nests of the former are often found by themselves, but as far as concerns myself personally, I have never found the nest of the Missel-Thrush without seeing at the same time that of the Chaffinch, or at least, as I thought, with one exception, three or four years ago. I had found on an isolated apple-tree the nest of a Missel-Thrush, and sought in vain for its companion, the Chaffinch, till at last an old companion, who had never swerved from his belief in their association, accused me of not looking in the right place; and what followed showed that he was correct; for in a new search that we made we found the Chaffinch's nest on the same tree, and at only three metres from the other one; but it was closely concealed in the branch of a mistletoe that grew there. I sought for a long time the reason of so strange an association between two birds differing so much from one another in size and constitution, till a recent observation appeared to give the key to the mystery. On going into the country on the 1st of May I found just in front of my window the nest of a Missel-Thrush on an elm, and that of a Chaffinch on an acacia, and the birds were only distant five or six metres from one another, and both were sitting. Now the Magpies are very numerous in the vicinity; but the moment that one of them approached the elm, the Chaffinch would utter a sharp cry, causing the Missel-Thrush to dart like an arrow on the intruder, the latter bird often losing some feathers in the shock, and being glad to seek safety in flight. Each time that a Magpie approached the tree the Chaffinch uttered the same cry, and the scene was renewed with the same result. Two years before that, the companions had nested on the same elm tree; but some boy had robbed the domicile of the Chaffinch, and the next day a prowling Magpie had carried away the young ones of the Missel-Thrush, and had let them fall to the ground. The Missel-Thrush and the Chaffinch begin breeding about the end of March, shortly after the Magpie, and generally a month before other Passeres commence building their nests on the trees. Their nests are so firmly fixed to the branches, and appear so much to form part and parcel of the tree, that they are difficult to be perceived from the ground, but as yet there are not sufficient leaves to conceal them from the keen eye of a bird sailing above them. In April and May the Magpie has its young ones to feed, and it appears to seek very eagerly for the unfledged young of other birds. Amongst the Passeres which build on the ground or in holes, some are now rearing their little ones; but their nests are generally well concealed or nearly inaccessible. Missel-Thrushes and Chaffinches would be thus exposed to the constant attacks of the Magpies in search of food for their young, if nature had not given them these means of warding off attacks by combining courage with constant vigilance. The Chaffinch, according to the testimony of many naturalists, appears to be one of the first in France to salute the dawn; thus it is enabled to give the earliest intimation of the approach of an enemy, and to call the attention of its companion, whilst, on the other hand, the Missel-Thrush vigorously attacks the intruder and puts it to flight. Now does this association of the two birds, especially remarked in the neighbourhood of Paris, where Magpies are rare, exist all over France, or, for instance, on the borders of the Channel? I cannot answer the

question; but to do so it would suffice if the naturalists of every country were closely to question the children of their district on the subject, as unfortunately there are very few countries where boys do not take a delight in pillaging the nests of the feathered creation, a proceeding which is of no profit to any one, but is a great detriment to agriculture."

A series of the eggs of this Thrush in Dresser's collection vary in size from $1\frac{3}{40}$ by $\frac{36}{40}$ inch to $1\frac{13}{40}$ by $\frac{36}{40}$, and are dull brownish olive, or reddish grey in colour, covered with pale purplish brown underlying shell-spots, and dark reddish brown surface-blotches, which are generally distributed over the surface of the egg. Dr. E. Rey sends us word that the "average dimensions of fifty-six eggs in his collection are 29.5 by 22.2, the largest measuring 31.4 by 22.6, and the smallest 28.1 by 21.0 millimetres respectively; the number of eggs is generally five, sometimes four, and the time of breeding from the 9th of April to the 12th of July."

The description of the male is taken from a beautiful specimen in Lord Walden's collection, shot near Cookham, in Berkshire, on the 5th of October 1867, that of the young being taken from a specimen procured at Hampstead in July 1871. The figures are drawn from specimens in our own collection, the old bird being from the neighbourhood of Stockholm, obtained there by Professor Sundevall on the 20th of February 1862. It is by no means so bright an example as could have been selected, but is an average specimen selected from a number of individuals. The young bird figured is from a Russian specimen in Dresser's collection, and has been chosen in order to show the bird before it quite gains its adult dress. The spotted nature of the very young bird is well known, and has been often illustrated.

In the preparation of the above article we have examined the following specimens:—

E Mus. Sharpe and Dresser.

- a.* Stockholm, February 20th, 1862 (*C. J. Sundevall*). *b.* Christiania, April 21st, 1866 (*R. Collett*). *c.* Near London, July 1st, 1871 (*H. J. Burton*). *d.* Saxony (*W. Schlüter*). *e.* Turin, September 10th, 1870 (*E. Turati*). *f.* R. Volga (*F. Moeschler*). *g.* Mussoorie (*W. G. Brooks*).

E Mus. H. E. Dresser.

- a.* Cookham, Berks, December 10th, 1867 (*R. B. Sharpe*). *b.* Hampstead, near London, July 20th, 1869 (*C. Davy*). *c.* *d.* Russia (*Dr. Renard*). *e.* Asia Minor, October 1865 (*T. Robson*). *f.* Smyrna. *g.* Himalayas. *h.* Simla, February 12th, 1865 (*C. H. T. Marshall*). *i.* N.-W. India (*C. H. T. Marshall*).

E Mus. Lord Walden.

- a.* Cookham, Berks, October 5th, 1867 (*W. Briggs*). *b.* Ortakeuy Hills, Turkey, November 2nd, 1864 (*T. Robson*). *c.* Cashmere (*T. C. Jerdon*). *d.* Pangi, N.-W. Himalayas. *e.* Fagoo, near Simla, August 1866 (*R. C. Beavan*).

E Mus. J. H. Gurney, jun.

- a, b, c.* Near London (*H. J. Burton*). *d, e.* Norwich (*Gunn*). *f.* Castle Eden, Durham, May 16th, 1866 (*J. H. G.*). *g.* Greatham, Durham, April 12th, 1866 (*J. H. G.*). *h.* St. Petersburg, September 25th, 1869 (*J. H. G.*).

E Mus. H. B. Tristram.

- a.* Greatham, Durham, March 1867 (*H. B. T.*). *b.* Asia Minor, November 27th, 1864 (*T. Robson*). *c, d.* Mussoorie, September 1869 (*W. G. Brooks*).



TURDUS MUSICUS.

XXV

TURDUS MUSICUS.

(SONG-THRUSH.)

Turdus musicus, Linn. Syst. Nat. i. p. 292 (1766).*Turdus minor*, Brehm, Vög. Deutschl. p. 382 (1831).*Turdus philomelos*, Brehm, Vög. Deutschl. p. 382 (1831)*Sylvia musica*, Savi, Orn. Tosc. i. p. 211 (1827).*Merula musica*, Selby, Brit. B. i. p. 162 (1833).*Iliacus musicus*, Des Murs, Traité d'Ool. p. 292 (1860).

Mavis, *Throstle*, *Throstle Cock*, *Grey Bird*, *Garden-Thrush*, *Smeorach*, English; *Grive*, French; *Tordo bottaccio*, Italian; *Zorzal*, Spanish; *Tordo*, Portuguese; *Malviz*, Maltese; *Singdrossel*, German; *Zanglijster*, Dutch; *Naaltrost*, Norwegian; *Talltrast*, *Sångtrast*, Swedish; *Drossel*, *Sangdrossel*, *Graadrossel*, *Bögdrossel*, Danish; *Haukirastas*, Finnish; *Drozopavtschi*, Russian.

Figuræ notabiles.

Werner, Atlas, *Insectivores*, pl. 13; Gould, B. of Eur. pl. 78, fig. 2; Yarr. Brit. B. i. p. 193 (1843); Naum. Vög. Deutschl. Taf. 66, fig. 2; Kjærb. Orn. Dan. Afb. xvi. fig. 3; Schlegel, Vog. Nederl. pl. 108; Gould, B. of Gt. Brit. pt. ix.; Bettoni, Ucc. nidif. Lomb. ii. fasc. xxiv.

♂ suprâ saturatè olivaceo-brunneus: tectricibus alarum magis fulvescenti-brunneis, conspicuè aurato-fulvo terminatis: remigibus saturatè brunneis, extûs olivaceo-brunneo lavatis, præsertim secundariis: caudâ olivascenti-brunneâ, vix aureo tinctâ, subtus pallidiore: loris et supercilio indistincto fulvescentibus: plumis orbitalibus fulvescenti-albis: genis brunnescens, regione paroticâ posticâ nigricante, aurato-fulvo longitudinaliter striatis: striâ malari a basi mandibulæ ortâ fulvescente: corpore subtus albicante, gutture et pectore antico fulvescentibus: gulâ ipsâ immaculatâ, sed corpore reliquo maculis subtriquetris brunneis undique notato, maculis ventris minoribus et potius lineas angustas longitudinales formantibus, hypochondriis obscurè brunneo striolatis: subcaudalibus albis, paullò brunneo lavatis: subalaribus lætè aurato-fulvis: rostro nigrianti-brunneo, ad basin mandibulæ flavicante: pedibus pallidè carnis: iride brunneâ.

♀ mari similis, paullò minor.

Juv. suprâ aurato-brunneus, fulvo longitudinaliter striatus: dorsi plumarum parte medianâ fulvâ versus apicem dilatâtâ et nigro terminâtâ: tectricibus alarum latissimè fulvo striolatis, plumarum omnium parte medianâ versus apicem conspicuè dilatâtâ, majoribus fulvo marginatis et terminatis: alis et caudâ ut in adultis coloratis, illis aurato-brunneo magis conspicuè marginatis et lavatis: facie laterali clariùs aurato-fulvâ, supercilio distincto, genis et vittâ malari minùs nigro maculatis: subtus omninò fulvescens, abdomine albicante, gulâ immaculatâ, corpore reliquo nigro maculato: subcaudalibus fulvescentibus, subalaribus saturatioribus aurato-fulvis: rostro corneo: pedibus flavicante-brunneis.

Male. Above dark olive-brown, the head slightly inclining to golden brown; wing-coverts coloured like

the back, the outermost very perceptibly washed with golden brown, and both median and greater coverts distinctly tipped with bright buff; tail olive-brown, rather warmer in tint, paler underneath, the shafts of the feathers dark brown above, whitish below; lores buff, and an indistinct eyebrow tinged and spotted with the same colour; ring of feathers round the eye buffy white; cheeks brownish, inclining to black on the hinder part of the ear-coverts, and plainly streaked with buff; a malar stripe buffy white, spotted with blackish, below which a distinct moustache of black; under surface of the body white, the throat and fore part of the breast clear buff, the former unspotted, but the latter covered with triangular spots of brown, which become smaller on the lower part of the body, till on the abdomen only a few narrow lines of black appear, the flanks being more broadly and obscurely mottled and striped; under tail-coverts whitish, slightly washed with brownish; under wing-coverts rich golden; bill blackish brown, yellowish at the base of the under mandible; legs pale flesh-colour; iris brown. Total length 8·8 inches, culmen 0·8, wing 4·8, tail 3·4, tarsus 1·3.

Female. Similar to the male, but a little smaller, and occasionally duller in plumage.

Young. Paler than the adults, and more fluffy on the head and rump, feathers of the head and back marked with whitish bands and streaks down the centre of the feather; wing-coverts very conspicuously tipped with fulvous, which also extends a little way up the shaft of the feather; quills and tail as in the adult, except that the former are more washed with golden buff on the outer web; sides of the face and under surface of the body whitish, with a tinge of buff on the ear-coverts and fore part of the breast, all the under surface covered with blackish spots; under wing-coverts rich golden; bill and feet paler than in the adult.

Nestling. Above golden brown, with longitudinal shaft-markings of bright buff; these markings caused by a line of buff down the shaft of the feather, which broadens out towards the apex of the plume, being margined with black at the extreme tip; wing-coverts marked like the back, the greater coverts tipped with buff, without the indication of the shaft; sides of the face bright golden buff, the eyebrow being very distinctly delineated; hinder part of the ear-coverts blackish, the cheeks obscurely specked with black; throat and fore part of the body rich golden buff, the throat unspotted but marked down each side with a narrow line of black, the breast covered with small spots of black, less thickly distributed on the abdomen, which is white; under wing-coverts bright golden-buff.

Obs. As the bird progresses towards maturity the markings on the back-feathers become bleached and more obsolete, turning to white; and the breast becomes white, the yellow tinge disappearing.

Winter plumage. As far as we can see, the winter dress of the present bird differs little from its summer dress, at least in English examples. One specimen in Canon Tristram's collection from Palestine seems to be rather pale in colour, and to be a little more thickly spotted on the breast. English birds are always much darker in coloration and have the fore part of the chest of a deeper buff than any examples we have yet seen from the Continent.

THIS well-known species is distributed over the entire Palæarctic Region, although of very rare occurrence in the extreme eastern portion. In Western Europe it is migratory to a very great extent, although in some countries a resident species.

Mr. A. G. More gives it as "breeding everywhere throughout England, except Shetland, where the nest has not yet been taken." In the 'Birds of Ayrshire and Wigtownshire,' Messrs. Gray and Anderson state that the Thrush is "generally distributed. Near Girvan it resorts,

during the autumn months, to the sea-shore, frequenting pasture-lands in the immediate vicinity, and feeding on a small species of *Helix* conspicuously plentiful at that season. It breeds upon Ailsa Craig, where its song may be heard strangely in contrast to the other sounds of various quality to be heard on that lonely rock." Our friend Mr. J. A. Harvie Brown writes to us:—"The Common Thrush is abundant in several birch-covered districts of Scotland, even as far north as Cape Wrath, whence I have once seen the eggs; I have also received the eggs from Caithness. They are, however, very local so far north, and I know of some birch-covered districts where not one will be found at the present day. It is common about Scourie, and especially so about Badcall and Loch Suver; we have also received its eggs from near Tongue, where Mr. Crawford writes of it as a common bird. Of this species Mr. Selby says that at Tongue he was informed 'they do not migrate, but remain during winter*upon the margins of the Firth (? Kyle of Tongue) and other low situations.' It is somewhat curious that in the west of the county we have repeatedly been assured that in winter this species resorts to the stony tops or higher parts of the mountains, where, in company with or at the same time as innumerable Rooks, they feed upon the numerous berries which are there found even in midwinter. It has, however, been suggested to us that it is just possible that both Mr. Selby's and our own informants may have mistaken Redwings for Song-Thrushes." In Ireland it is also common.

In most parts of Scandinavia the Song-Thrush is plentiful in summer. In Sweden, according to Nilsson, it is found both in the north and south of the country, and a few remain in the southern part during mild winters, the chief body, however, migrating to warmer climates in September and October, and returning in March and April to the north again. Mr. Robert Collett writes:—"The Song-Thrush arrives in the neighbourhood of Christiania about the same time as the Woodcock, in the month of April, some years as early as the first of the month. . . . Late in April they pair, and betake themselves to the spruce woods to nest They generally breed in colonies, which, however, are smaller than those of the Fieldfare. About the middle of August the families collect in large flocks, and range about the woods. Most of them leave us late in October; but stragglers are seen in November. In mild seasons a stray one or so remains over the winter with us." Kjærbølling calls it "the commonest Thrush in Denmark, and the best songster. It arrives as a migrant in March or April, a little before the Redwing, and leaves in September or October; only a few remaining with us during mild winters." Von Wright says it is more or less common all over Finland; and Dresser found it plentiful in the southern part of the country, but much less so in the high north, where its place is taken by the Fieldfare and Redwing. He never observed any to remain during the winter; all appeared to leave the country late in September. It is also recorded as common in Esthonia and Livonia by Meyer, leaving in the autumn. In Holland, Mr. H. M. Labouchere informs us, it is not so common as in England; but large flocks of Thrushes visit that country in autumn on their journey south. De Selys-Longchamps states that it is very common in all Belgium on its passage in September and October, and again in March and April. A certain number remain to breed there. In Luxembourg De la Fontaine says it arrives in February, or early in March, and leaves from about the 10th of September to the 10th of November. Kræner gives it as resident in Alsace and the Vosges from April to October. Throughout the whole of Germany it is common; and Seidensacher says that in Styria it is not rare, leaving late in

October, and arriving early in March. It is likewise one of the commonest birds in France; and Bailly writes:—"The Song-Thrush is common in Switzerland and Savoy during the summer, but migrates southward about the time when the Snipe commence to arrive here from the north, excepting stray birds which occasionally remain over the winter." In Spain, says Mr. Howard Saunders, "this species swarms from October to March, when all seem to retire northwards, and even from the higher wooded regions of the Sierra Nevada. I have never received its very unmistakable egg." Our friend Major Irby tells us that at Gibraltar it "arrives early in November, leaving about the end of March, and during that period is common. I have seen one in April, but never met with or heard of a nest." In Portugal Mr. A. C. Smith says he found it common in suitable haunts; but Dr. E. Rey tells us that he did not see it in that country himself. Count Salvadori writes to us as follows:—"Not a few Thrushes live in our highest mountains during summer, descending to the plains in autumn, when immense numbers arrive from the north, and, after having traversed Northern Italy, go into winter quarters in the warmest parts, especially in the Maremma, Sicily, and Sardinia, whence they start again for the north in March. I have noticed that in Piedmont they begin to appear on the plains about the middle of September, whereas they do not arrive in Central Italy till the beginning of October." Professor Doderlein remarks:—"In the district of Modena this species is very abundant on the autumn passage, and somewhat less so in the spring, when almost all continue northwards, only a few remaining to nest in the Upper Apennines. In Sicily it is very abundant in winter, arriving in October." Lord Lilford writes that it is "very common in winter in Corfu, Epirus, and Acarnania, arriving in October, and disappearing in April; a few, I think, occasionally remain to breed in Epirus." Captain Sperling says that he found it in Rhodes, Greece, and the Ionian Islands, and he further remarks:—"These birds are not very plentiful in summer; but in winter they are in the greatest abundance; so I suppose that the numbers are increased by migrants from more northern climes." Lindermayer considers it the commonest Thrush in Greece, but he says it has not yet been observed to breed there. Von der Mühle, however, believes that it breeds in Rumelia, and states that it is very common in the vineyards from the late autumn throughout the winter. Messrs. Elwes and Buckley found it common in Turkey; and Mr. Robson sends us the following note:—"This species is numerous in Turkey in Asia and Europe; and quantities are shot by sportsmen for the table in winter. In the middle of October numbers arrive and pass into Asia Minor, repassing into Europe in the beginning of April; many stay over the winter in thickets on mountain-sides and valleys, and in large woods. In summer they are rarely seen away from the large woods, which they continue to inhabit, and rear up their young. Some of these birds are smaller and darker-spotted than others, and correspond with those found in the north of England in winter, and called by the people 'Whin Greybird.' In the cultivated gardens and parks near the Bosphorus it is not seen in summer." The late Mr. Strickland found it at Smyrna during the winter; and it was among the birds forwarded from Trebizond by Mr. Keith E. Abbott. Professor von Nordmann says that it breeds "in several parts of New Russia. Both in the spring and autumn migration it is found near Odessa." Mr. H. Goebel records it as common at Uman, where it breeds, arriving late in March and leaving late in October or in November. According to Radde it occurs in Central Siberia, as he found it amongst the cage-birds at Irkutsk. Von Middendorff says that it "breeds not uncommonly

near Udskoj-Ostrog. Early in June the young birds were fledged." It even extends to China, though apparently of rare occurrence in that country, and only two instances of its capture are known as yet, one of these birds having been obtained at Peking by Père David, while Mr. Gould has a second specimen in his collection from Foochow. Returning once more to the shores of the Mediterranean we find that, according to Canon Tristram, "*Turdus musicus* often occurred in winter in the higher grounds; and I occasionally noticed it in the wooded parts of Northern Galilee in spring, but we did not find its nest." In Egypt Mr. E. Cavendish Taylor says that he shot it two or three times in February; and Captain Shelley also met with it there: he states that it is far most abundant in the winter. Dr. von Heuglin found it not uncommon in the winter in small flocks in Egypt and Northern Arabia. Hemprich and Ehrenberg procured it in Nubia. In Malta Mr. C. A. Wright says it is "very abundant in October and November, and a few continue to be seen till December: it repasses in March." Loche records it as "very common in the autumn in all the wooded portions of Algeria;" and Mr. C. F. Tyrwhitt Drake found it plentifully in Tangier and Eastern Morocco. It even occurs in Madeira as a straggler, according to Mr. E. Vernon Harcourt.

It would, we believe, be impossible to find a better account of the habits of the Song-Thrush than that given by the late Mr. Macgillivray; and we have therefore reproduced it entire as forming a complete history of the bird:—"The Song-Thrush is associated in my memory with the Hebrides, where it is perhaps more abundant than in most parts of Britain. There, in the calm summer evening, such as for placid beauty far exceeds any that I have elsewhere seen, when the glorious sun is drawing towards the horizon, and shedding a broad glare of ruddy light over the smooth surface of the ocean; when the scattered sheep, accompanied by their frolicsome lambkins, are quietly browsing on the hill; when the broad-winged Eagle is seen skimming along the mountain ridge, as he wends his way towards his eyry on the far promontory; when no sound comes on the ear, save at intervals the faint murmur of the waves rushing into the caverns and rising against the faces of the cliffs; when the western breeze, stealing over the flowery pastures, carries with it the perfume of the wild thyme and white clover; the song of the Thrush is poured forth from the summit of some granite block, shaggy with grey lichens, and returns in softer and sweeter modulations from the sides of the heathy mountains. There may be wilder, louder, and more marvellous songs; and the Mocking-Bird may be singing the requiem of the Red Indian of the Ohio, or cheering the heart of his ruthless oppressor, the white man of many inventions; but to me it is all-sufficient; for it enters into the soul, melts the heart into tenderness, diffuses a holy calm, and connects the peace of earth with the transcendent happiness of heaven. In other places the song of the Thrush may be lively and cheering; here, in the ocean-girt solitude, it is gentle and soothing; by its magic influence it smooths the ruffled surface of the sea of human feelings, as it floats over it at intervals with its varied swells and cadences, like the perfumed wavelets of the summer wind.

"Here on the hill-side lay thee down on this grassy bank beside the block of gneiss that in some convulsion of primeval times has been hurled unbroken from the fissured crag above. On the slope beneath are small winding plots of corn, with intervals of pasture, and tufts of the yellow iris. The coast is here formed of shelving crags and jutting promontories, there stretches along in a winding beach of white sand on which the wavelets rush with gentle murmur. Flocks

of Mergansers and Dusky Cormorants are fishing in the bay; the White Gannets are flying in strings towards the ocean; the Rock-Doves glide past on whistling pinions; and the joyous Starlings bound toward their rocky homes. Hark to the cry of the Corn-crake, softened by distance, now seeming to come from afar, now louder as if borne toward you by the breeze. It has ceased; but the Cuckoo calls to his mate from the cairn on the hill. Again all is silent. The streaks in the channel show that the tide is ebbing; a thin white vapour is spread over the distant islands; and beyond them the spirit wings its flight over the broad surface of the ocean, to where the air and the waters blend on the western horizon. But it is recalled by the clear loud notes of that speckled warbler, that in the softened sunshine pours forth his wild melodies on the gladdened ear. Listen, and think how should you describe the strain so as to impress its characters on the mind of one who never heard it. Perhaps you might say that it consists of a succession of notes greatly diversified, repeated at short intervals with variations, and protracted for a long time—that it is loud, clear, and mellow, generally sprightly, but at times tender and melting. You might add that two birds at a distance from each other often respond, the one commencing its song when the other has ceased—and that sometimes several may be heard at once, filling a whole glen with their warblings. Listen again, and say what does it resemble.

“Dear, dear, dear
 Is the rocky glen;
 Far away, far away, far away
 The haunts of men.
 Here shall we dwell in love
 With the Lark and the Dove,
 Cuckoo and Corn-rail;
 Feast on the banded snail,
 Worm and gilded fly;
 Drink of the crystal rill,
 Winding adown the hill,
 Never to dry.

“With glee, with glee, with glee,
 Cheer up, cheer up, cheer up; here
 Nothing to harm us; then sing merrily,
 Sing to the loved one, whose nest is near;
 Qui, qui, qui, kween, quip,
 Tiurn, tiurn, chipiwi,
 Too-tee, too-tee, chin choo,
 Chirri, chirri, chooe,ee,
 Quin, qui, qui.”

“No more, pray: the Thrush’s song is inimitable and indescribable. It is heard at all seasons in fine weather, but especially in spring and summer, particularly in the early morning and about sunset. But it is not in sunshine only that this gentle songster warbles its wild notes; for often in the midst of the thick rain it takes its stand in some sheltered spot, under the cover of a projecting crag or stone, and for hours, perhaps, amuses itself with repeating its never-tiring modulations.

“The Song Thrush, which is a resident species, is distributed over all parts of Scotland and England. In summer it prefers the woods and hill-sides, the bushy banks of streams, and sheltered places at some distance from human habitations, although in cultivated districts it often nestles in the orchards, gardens, and hedges. In winter the individuals which had made the woods and glens their summer residence approach the houses, and feed in the gardens and fields, or betake themselves to the rocky shores, where they find subsistence by breaking the whelks and other shell-fish.

“Although in the cultivated districts it is seldom seen, unless among the bushes or hedges, it is capable of flying to a great distance, which it does in gentle curves, with quick flaps, intermitted at intervals, sometimes at a considerable height, but more frequently only so high as to clear the trees. Its flight is always rapid; and it selects its place with quickness, settling instantaneously.

“When on the ground, and in the attitude of observation, it droops its wings a little, keeps its tail nearly horizontal, and raises its head obliquely. On observing a worm or other object, it leaps briskly towards it, picks it up, or, if it has withdrawn, pecks at the earth until it has seized it. Its general mode of progression on the ground is by leaping. When in a listless mood it droops the tail and wings, draws in its neck, and ruffles its feathers. In this attitude it may often be seen perched on a tree, bush, or stone.

“Its food is chiefly found on the ground, and consists of snails, earthworms, larvæ, coleoptera, hips, berries, and seeds of various kinds. *Helix aspersa*, *hortensis*, and *nemoralis* supply a great part of its food in winter. It breaks the shells by raising them in its bill and knocking them repeatedly against a stone. Large heaps of the shells thus broken may be seen by garden-walls, and in pastures on the edges of thickets. In the Hebrides, where it frequents the shores in winter, it treats the *Turbo littoreus* and *Trochus conuloides* in the same manner; and of these shells the fragments may often be found under shelter of some stone or slab to which the bird flies with its prey. Many years ago, having in the course of my littoral rambles in Harris, frequently heard a sharp sound like that of a small stone struck upon another, I endeavoured to discover its cause, but for a long time in vain, until at length, being one day in search of birds when the tide was out, I heard the well-known chink, and, standing still, discovered at a distance, in a recess formed by two flat stones at the upper part of the shore, a bird moving its head and body alternately upwards and downwards, each downward motion being followed by the noise which had hitherto been so mysterious. Running up to the place, I found a Thrush, which, flying off, left a whelk newly broken, but with the animal in it, lying amidst a heap of fragments around a smooth stone. Having some years after mentioned the circumstance to a scientific friend in Edinboro’, I was favoured with an assurance of the utter impracticability of the feat, which, indeed, is at first mention not very credible, although one may easily satisfy himself that a whelk, thick as it is, is very easily broken by knocking it smartly against a hard body.

“In the plains Thrushes are sometimes met with in considerable numbers in winter, and during snow betake themselves along with the Fieldfares and Redwings to wet meadows; but the species is not strictly gregarious at that season. It is always more easily procurable than any other species of the genus, being almost as familiar in winter as the Robin. Happening on the 12th of March 1837, when there was snow on the ground, to meet with a Thrush

searching for food along a wall, the base of which was clear, I followed it slowly over a space of about two hundred yards, without its seeming in the least alarmed; for it allowed me at times to approach within six paces. On this occasion, and on others, I have observed that just before rising to fly it runs a few steps, and does the same after alighting, although its ordinary mode of progression is by leaps.

“Song-Thrushes are sometimes seen in the markets, along with Fieldfares and Blackbirds. In the beginning of winter, when they feed on snails and worms, they are very fat and sapid, as well as savoury. Besides man, their principal enemies are the smaller Hawks; I have several times seen a Thrush take refuge in a house when pursued by a Merlin or Sparrow-Hawk.

“The full song of this species is heard in April, May, and June, although, as I have already said, it may be occasionally heard at any season. In March it pairs, and by the end of that month, or in the beginning of the next, begins to construct its nest, which is placed in a thick bush of any kind, or in a hedge at a small height, or on a rough bank amongst shrubs or moss. In the unwooded parts of the country it is found under shelter of a projecting stone or crag, in the crevice of a rock, or at the root of a tuft of heath, or among the stunted willows on the rocky bank of a stream. It is composed externally of slender twigs, roots, grass, and moss, and is lined with a thin layer of mud, cow-dung, or rotten wood, neatly laid on, and between which and the eggs no other substance is interposed. The diameter of the cavity is usually about four inches, its depth from two and a half to four. As a good deal of wrangling has taken place on the subject of Thrush’s nests, I may be allowed to be somewhat particular in this matter.

“Although the structure of the nest does not vary much, the materials are very diversified. In a nest before me, which is very bulky, the exterior is formed of the long tough roots of various plants, a twig of *Rumex crispus* or *R. latifolius*, another of the rasp, a clipping of box-wood, a piece of pack-thread, numerous tufts of *Poa annua* and *Stellaria media*, two or three mosses, and some other substances. Within this is a more elaborate structure of fibrous roots, tufts of grasses, straws, and some beech leaves, interwoven, and compacted with some tenacious substance. This inner cup is lined or plastered with a very thin but firm coating of what seems to be horse-dung, on the surface of which are spread numerous chips of straw and slender grasses, but certainly no decayed wood, as some allege to be usually the case. This nest is in diameter three inches and a half, in depth two and a half, its greatest diameter seven inches, and its greatest depth four and a half. This is the nest of a civilized Thrush, it having been found in a hedge in the immediate vicinity of Modern Athens.

“On the 5th of May 1836, I found in a honeysuckle-bush in a wood between Haddington and Gifford the nest of a Thrush, in which the bird was working at the time, completing its interior, in which was a piece of wet rotten wood, quite soft and friable, which it was applying to the walls. Another nest found near Gifford was plastered with horse-dung. One brought to me from Melville woods, on the 3rd of May 1837, by my son, who found in it five eggs, is composed externally of twigs, straws, and stems of herbaceous plants, its inner cup of a few slender twigs of trees, stems and leaves of grasses, oak-leaves, and a large proportion of mosses, interwoven and agglutinated, but without mud. The lining, which is not thicker than two twelfths of an inch at most, is certainly composed entirely of fragments of rotten wood and other vegetable substances, without any mud, clay, or dung. Its internal diameter at the mouth is three inches

and a half, but below the mouth four inches, the depth two and a half. In all the specimens which I have examined the mouth of the inner cup is contracted and firmly woven.

“The eggs are generally five, but vary from four to six, of a regular or broad oval form, bright bluish-green, with scattered spots of brownish black, of a roundish form, and more numerous at the larger end. They vary considerably in size, the largest in my collection measuring thirteen twelfths by nine and a half, the smallest eleven and a half by eight and a half twelfths. They are deposited in the end of April, sometimes so early as the beginning of that month, and sometimes not until May. The young I have found abroad from the 20th of April to the middle of June. Another brood is generally reared in the season.

“Mr. Weir, to whom the reader of these volumes is indebted for so many curious and interesting observations relative to the habits of our native birds, has favoured me with the following, having reference to the present species:—

“‘Boghead, 16th December 1837. In Mr. Mudie’s ‘Feathered Tribes of the British Islands,’ a work published so recently as 1834, I was astonished at finding the following notification with respect to this bird:—“When collecting food for their young, the birds carry it not in the bill, but in the stomach.” If in England the Thrushes carry food to their young in their stomachs, I can affirm that in this neighbourhood they are not accustomed to do so.

“‘At the distance of nine feet from a Thrush’s nest, which was built in an old wall, I erected a hut with some branches of spruce and Scotch fir, and took possession of it on the morning of Thursday the 8th June 1837, at a quarter past one o’clock, for the purpose of making observations on the habits of these birds. At half-past two o’clock they commenced feeding their brood. From that time until four o’clock they fed them fourteen times. From four to half-past five o’clock they fed them twenty-two times. As one of the young birds was dressing its feathers, it lost its balance, and fell on the ground. No sooner did the old ones perceive it than they set up the most doleful lamentations. I replaced it in the nest. Having seen me return to my retreat, they would not feed their young until I came out. I accordingly went home for my boy, who after I had gone in again, carefully concealed the entrance. His departure attracted their notice; for, after having followed him to a considerable distance, they returned, and without suspicion commenced their labour. From half-past five until seven o’clock they fed them twenty-four times. From seven to eight o’clock they fed them sixteen times, and from eight to nine eleven times. By this time I was so benumbed with cold, for it blew boisterously from the east, and tired with remaining in the same posture, that had I not on the preceding evening made a resolution to continue my task, as the birds were ripe, I should in all probability have relinquished it. I was also annoyed by the visitation of Morpheus, who again and again closed my eyelids and nearly lulled me into repose. Between nine and ten o’clock I kept them out of their nest, to see if during the succeeding hour they would feed their young ones more frequently. This, however, appeared to make but little difference. From ten to eleven o’clock they fed them ten times, and from one to two o’clock eleven times. From two to three o’clock they fed them eight times, and from three to four o’clock six times. From four to five o’clock they fed them five times, from five to six o’clock six times, and from six to seven o’clock twelve times. From seven to eight o’clock they fed them thirteen times, and from eight to half-past nine o’clock seventeen times.

They now ceased from their labours for this day, after having fed their brood two hundred and six times.

“ ‘In the forenoon and part of the afternoon they frequently stretched out the wings of the young birds, and with their bills one would have thought that they sometimes trimmed almost every one of their feathers. In keeping their young ones clean they are uncommonly careful. As a proof of this, I ordered my servant-boy to rub the head and back of two of them with soft cow-dung. Upon coming into their nest they immediately perceived it, and seemed much enraged. They, however, set to work, and did not desist until they had completely removed it. For this purpose they made use of dry earth, which in the operation appeared to me to assist them greatly.

“ ‘Their food in the morning consisted principally of snails and slugs. They sometimes brought to their young one large worm, at other times three and four worms. As for some weeks past there had been a severe drought, the worms which they caught in the middle of the day were smaller and in less quantities than those which they procured in the morning and evening.

“ ‘During the day the Thrushes swallowed almost the whole of the *droppings* of their young. As from personal observation I had until now been ignorant of this circumstance, and did not recollect to have seen it mentioned in any book which I had perused, I was determined to be more fully convinced of its truth, and accordingly next day put a female out of her nest, in which she was sitting upon four well-feathered young ones. In half an hour she returned, and after having fed them stood until they ejected their droppings, which she immediately swallowed, and then, without flying off, sat down upon them for an hour and a half. A short time after this I observed her repeat the same thing. In further confirmation of this curious fact, I shot a male the moment after he had swallowed the droppings, and upon dissection they were found deposited in his stomach.

“ ‘They are so exceedingly acute of hearing, that the least motion which I made attracted their attention; and I am confident that, had it not been a very stormy day, I should not have succeeded in my observations.

“ ‘In erecting their nests Thrushes are sometimes very expeditious. On Thursday morning, the 15th June, 1837, a pair began to build in an apple-tree in my garden. On Friday afternoon the nest was finished; and on Saturday morning, the 17th, the first egg was laid in it, although the plaster in the inside was very wet. On Wednesday the 21st the female began to sit on five eggs; and on Monday the 17th of July the young ones flew out of their nest.

“ ‘Thrushes are sometimes very tame. Although I have put my head within a few inches of their nest, the female remained upon her eggs without showing any symptoms of uneasiness; and when the young ones were nearly ripe I have stood within a few yards of her whilst she was feeding them.

“ ‘In the inside of the barn of Bathville farmhouse, about a mile west from my residence, in the middle of June 1833, a pair of Thrushes built their nest on the end of the shaft of a threshing-machine, which had been set up against the wall, and there brought up five young ones. So familiar did they become, that when the children put down bread to them they immediately picked it up and gave it to their brood.

“Wishing to know how soon Thrushes would build after having been deprived of their young, I took four ripe ones out of a nest on Tuesday, the 6th of June, 1837. Having caught the female I pulled the feathers out of her tail, and set her at liberty. On Wednesday, the 21st of June, I discovered her sitting upon four eggs, of which I deprived her; and on Monday, the 8th of July, she again had a nest with eggs. I allowed her to bring up her family unmolested.

“The feelings of tenderness which these birds manifest towards the young of other birds have been displayed in several very striking instances. I have now in my possession a male Thrush which, when it was six weeks old, brought up a brood of half-fledged Larks. What is still more remarkable, he, with the most tender care and anxiety, fed a young Cuckoo which had been taken out of a Titlark's nest in Pottisham Moss. No sooner, however, had he taught this cruel bird to feed itself, than it requited its benefactor with harshness and ingratitude. Of the least particle of food it would scarcely allow him to partake. With it he had several very severe engagements; and so quarrelsome did the Cuckoo become that it deprived him of a great number of his feathers, so that I was at length obliged to put them in separate cages.’”

Respecting the present species in Scandinavia, Mr. A. Benzon writes to us:—“In Norway it is called *Måltrost*, under which name it occupies there the same place in poetry that the Nightingale does in other countries. The name *Kramsfugl* is used both for this and other Thrushes. It is said sometimes to winter with us, but generally arrives late in March or early in April, having its first eggs late in this latter month. Its first nest is generally built in a spruce tree or in a greenwood-tree, where old dried leaves remain, or on the side of a tree-trunk, and where there is cover, &c. After the leaves are on the trees it builds in many sorts of bushes, but seldom so low down as the Blackbird (*Turdus merula*), generally about two metres above the ground, though sometimes lower, or else very high up. I have no albino, but have seen one from near Copenhagen of a dirty-yellow colour. Here the nest is generally constructed of moss, inside dabbed flat with clay (probably assisted with the bird's spittle). The eggs are generally from four to five in number, seldom six. I have taken the first eggs on the 28th April, the last on the 10th May, but have known of them being taken much later, as for instance the end of July.”

The following interesting observations are extracted from Thompson's ‘Birds of Ireland’: — “In addition to the naked or externally shellless snails, insects (coleoptera, larvæ, chrysalides), worms, seeds, and soft vegetable matter, the smaller *Helices* and other land-shells form in winter a very considerable portion of the Thrush's food*. From a single stomach I have taken the *Helix cellaria*, *H. pura*, and *H. radiata*, in addition to *Limacelli*; and have similarly met with the *Bulimus lubricus* and *Vitrina pellucida*. I once, at the end of February, found several specimens of this last species in one bird, which contained also five shells of *Limaces* (the snails themselves being wholly digested), a coleopterous and another insect, together with chrysalides and larvæ.

“The intelligent gamekeeper at Tollymore Park (Down) remarked to me in 1836, that, when living in Ayrshire some years before that time with the Marquess of Bute, he had seen four pairs

* “Since these notes were first published, Mr. Macgillivray has remarked that ‘*Helix aspersa*, *hortensis*, *nemoralis*, supply great part of its food in winter’” (p. 133).

of cream-coloured Thrushes in one season; that they bred and had also young of the same colour, some of which were attempted to be reared, but unsuccessfully. They were observed but in the one season."

Respecting the autumnal migration in England the late Mr. Selby has written as follows:—"This well-known songster, whose sweetly variable notes enliven our groves from the commencement of spring to the close of summer, is indigenous in Britain, as the greater part of those bred in the island remain stationary through the whole year. But these our native birds are augmented by the visits of large flocks in the course of their autumnal journey from the more northern countries of Europe. These last generally make their appearance before the Redwing and Fieldfare, and, after recruiting their strength for a few days, move onward in a southerly direction. Like many of our other autumnal visitants, they arrive with a north or north-east wind, plainly indicating the countries from which they hold their progress. The Thrushes which remain with us never associate in flocks during the winter, like the two above-mentioned species, but continue dispersed throughout the country, haunting the thickets and hedges, where they find a supply of insects and slugs, and of such berries as form their principal food during the inclement season of the year. Upon the approach of very severe frosts, or falls of snow, I have observed that they move from the interior of the country towards the sea-coast, where the influence of the sea-breeze, soon dissolving the snow, exposes a portion of ground sufficient to furnish them with a scanty subsistence. If the season should prove temperate, the male bird begins to pour forth his love-notes as early as the latter part of January, or the beginning of the month following. In March the pair commence nidification, and the first brood flies about the month of May."

Professor Newton has also written in the 'Ibis,' for 1860 on the same subject; and his original notice we believe to be of sufficient importance to be transcribed entire:—"Mr. Tomes, in his excellent paper on White's Thrush in the last number of 'The Ibis' (1859, p. 379), speaks of the Song-Thrush (*T. musicus*) as having 'resident habits,' and possessing 'organs of flight not adapted for migration.' Now, without pausing to inquire whether the words 'resident' and 'migratory' do not in most (if not in all) cases refer to special localities, and also whether we may not be confusing two very dissimilar ideas in applying these terms indiscriminately to the collective or particular individuals of a species, I wish to remark that I believe the Song-Thrush, throughout by far the greater part of its geographical range, to be *essentially migratory*. It is true that this fact has not been recorded by many writers in this country; but to mention the naturalists who have noticed it on the Continent would be to enumerate almost every European ornithologist of authority from Sweden to Sicily. Of British authors, however, Mr. Selby alludes (Brit. Orn. i. p. 163) to the 'considerable accession in number' which our native Song-Thrushes receive towards the end of autumn from the north—a remark which is quoted also by Mr. Yarrell (B. B. i. p. 195). Messrs. Gurney and Fisher, in their 'Account of Birds found in Norfolk,' state (Zool. p. 1306) that 'in very severe winters many of the Song-Thrushes appear to leave this district and to go further south;' while two foreign naturalists, MM. Deby and Duval-Jouve, in local lists which have been printed in this country, speak in still more unqualified terms of the migration of this species. The former, in his 'Notes on the Birds of Belgium,' says (Zool. p. 861) that it is 'very common in March and April in spring, and on its return in September and

October,' and further gives (Zool. p. 1133) 'March 24' as the date of this bird's arrival at Laeken in the spring of 1845. The latter, in his 'List of the Migratory Birds of Provence,' not only includes it among the 'Regular Birds of Passage,' but says (Zool. p. 1118) 'This is the bird of passage *par excellence*, of our country,' and asserts that in its migration it crosses the Mediterranean.

"I may add that my own experience tends to show that all these authors are right in their statements. Since the autumn of 1849, my brother Edward and myself have paid much attention to the presence or absence of the so-called 'resident' species of *Turdus*. The result of our observations is such as to leave on our minds not the slightest doubt of the regular migration of the Song-Thrush, as far as concerns the particular locality whence I write. Year after year we have noticed that, as summer draws to a close, the birds of this species (at that season very abundant) associate more or less in small companies. As autumn advances, their numbers often undergo a very visible increase, until about the middle of October, when a decided diminution begins to take place. Sometimes large, but more generally small flocks are seen passing at a considerable height overhead, and the frequenters of the brakes and turnip-fields grow scarcer. By the end of November, hardly an example ordinarily appears. It is true that sometimes, even in severe weather, an individual or so may be found here and there, leading a solitary life in some sheltered hedge-bottom, or thick plantation which may afford conditions of existence more favourable than elsewhere are to be met with; but this is quite an exceptional occurrence. Towards the end of January or beginning of February, their return commences. They reappear at first slowly and singly; but as spring advances, in considerable abundance, and without interruption, until, in the height of the breeding-season, they by far outnumber their more stay-at-home cousins the Blackbirds.

"I do not suppose for a moment that these facts are similar all over England; indeed the testimony of many of my friends assures me to the contrary. Still I am induced to think that by constant and accurate observers some migratory tendency is to be detected in other districts; and as we are often told that the subject of British ornithology is exhausted (an assertion I much doubt), I venture to call the attention of naturalists to this point as one on which it certainly cannot be said at present that we have 'too much light.'"

In countries where the Thrushes migrate in great quantities, vast numbers are caught; and a most interesting account of the *Tenderie* or "*Grive-catching*" in Belgium, will be found in Mr. Gould's magnificent work, the 'Birds of Great Britain.' From Italy, Count Salvadori has addressed to us the following note on this subject:—"Thrushes are much esteemed for the table; and there are many modes of capturing them. In some places there are tracts of wooded ground which every year are arranged with birdlime and nets; and during the season on some mornings several hundreds are caught. In the Maremma Toscana men gain their livelihood by catching Thrushes and Blackbirds in snares, and each man looks after about three thousand snares. In Sardinia also large numbers are caught, boiled, and put into sacks with myrtle-leaves, and are sold at high prices in the markets."

The nesting is thus described by Hewitson:—

"The nest of the Thrush is composed of moss and dry grass, with the addition of a few sticks, straw, and roots, cemented together in the inside by a composition of clay and rotten wood.

Nearly all our writers on the same subject state that the nest of the Thrush is plastered with cow-dung; I am very much inclined to think that they are mistaken, and that if the material is ever used, it is in very rare instances only. Amongst a large number of the nests which I have examined, when the plaster was yet freshly spread, there did not appear to be any thing besides clay, in which were mixed up small pieces of rotten wood, forming together, when dry, a composition which in many instances is completely water-tight. When the spring has been a wet one, I have frequently found the newly finished nests half full of water, either causing their abandonment by the birds or delaying them some days from laying their eggs. In a few nests I have noticed particles of reeds and thistle-down mixed with the clay instead of rotten wood. In the south of England the Thrush begins to build early in March. In the north it is much later.

“In Westmoreland, where, with a party of my schoolfellows, I spent all my play-hours in hunting birds’ nests, each of us being on the alert and anxious to find the first of the season, we never met with the eggs of the Thrush earlier than the beginning of April, and for several years the first nest and eggs were taken between the 5th and 8th of the month.

“The situation where we used to find them varied much—in thick thorn or holly bushes, tall fern or brambles, the top of a dead stake-fence, or amongst the exposed roots of trees on a bank-side; they are also frequently built in gardens, on fruit-trees against a wall. Here, in Surrey, where evergreens abound, they are glad to make use of the early shelter of the laurel; and two or three pairs every year make their nests high up upon the horizontal branches of some large cedars. Mr. J. H. Gurney says that ‘a Song-Thrush in a plantation at Sprowston, near Norwich, instead of making her nest in the ordinary manner, laid and hatched her eggs on the bare ground without any nest, but simply in a little hollow scratched out at the foot and under the shelter of a small bush.’

“It is sometimes no easy matter to remove an old nest of the Thrush when placed upon the boughs of the laurel; the mud of which it is formed, kept moist by a wet season, will cause the branch to throw out roots which firmly bind it to the tree. The progress made by a Thrush in the construction of its nest varies as much as the weather does at the season. In cold weather the work goes on very dilatorily, and sometimes ceases altogether. In fine weather a nest will be completed from the first bit of moss plastered, and contain its first egg, within a week. This year I was witness to the most marvellous piece of architecture I ever saw. A Thrush had completed its nest in a fir tree against the house, and had early one morning laid its first egg. At ten o’clock the nest was torn out and taken away (how, I could not discover), but not, I believe, by human means; the rough grass which formed the bottom was all that was left. At ten the next day, much to my astonishment, I found that the birds had completely restored the nest, had again lined it with plaster, and that the female was then laying an egg; this time, as their perseverance deserved, they successfully reared their young ones.

“The Thrush lays four or five eggs, spotted usually with deep black, rarely with red or purple-brown; sometimes they are without spots; those which are laid early in the year, and during cold weather, are often less and of a lighter blue than those which are produced afterwards.”

This bird is often subject to albinism; and we have seen several partial and total albinos in

collections. Herr von Pelzeln writes us that in the Vienna Museum are several light-coloured varieties and partial albinos, and one pure white specimen.

Yarrell records the following anecdote:—"Mr. Knapp, in his 'Journal of a Naturalist,' has related an interesting fact in reference to the Thrush in the following terms:—"We observed this summer two Common Thrushes frequenting the shrubs on the green in our garden. From the slenderness of their forms and the freshness of their plumage, we pronounced them to be birds of the preceding summer. There was an association and friendship between them that called our attention to their actions. One of them seemed ailing, or feeble from some bodily accident; for though it hopped about, yet it appeared unable to obtain sufficiency of food. Its companion, an active, sprightly bird, would frequently bring it worms or bruised snails, when they mutually partook of the banquet; and the ailing bird would wait patiently, understand the actions, expect the assistance of the other, and advance from his asylum upon its approach. This procedure was continued for some days; but after a time we missed the fostered bird, which probably died, or by reason of its weakness met with some fatal accident."

Count Salvadori in 1863 communicated to 'The Ibis' the following anecdote respecting a hybrid Thrush:—"In November 1861 I purchased in Florence a living bird which had the appearance of a Thrush, and in size, colour of the bill, legs, feet, and upper parts was quite like a Song-Thrush. The lower parts were almost entirely black, except the edge of each feather, which was of a light colour; round the neck it had a narrow ring of feathers of a yellowish white; on the belly were two or three white feathers, spotted with black, like those of the Song-Thrush; the feathers under the tail were quite white. After a short time the yellowish circle of the neck disappeared. In July of the present year it began to change the feathers of the lower parts, and in September it already resembled very nearly the Song-Thrush, retaining only a few black feathers on the breast, which shortly disappeared. I was in expectation of future changes, when early in October it escaped. It ate chopped meat and the flour of maize. In spring it did not sing; its *zit* was like that of the Song-Thrush. I believe it to be a cross of the Song-Thrush and the Blackbird (*Turdus merula*)."

In the preparation of the above article we have examined the following specimens:—

E Mus. Sharpe and Dresser.

a. Hampstead, Middlesex (*Davy*). *b.* Cookham, Berks (*J. Ford*). *c.* Beckenham, Kent (*Wilson*). *d.* Pagham, Sussex (*R. B. S.*). *e.* Denmark (*A. Benzon*). *f.* Piedmont (*T. Salvadori*). *g, h, i, j, k, l, m.* Lombardy (*E. Turati*).

E Mus. J. H. Gurney, jun.

a, b, c, d, e, f, g. Greatham, Durham (*J. H. G.*). *h.* Moscow, September 14th, 1869 (*J. H. G.*).

E Mus. H. B. Tristram.

a. Marsaba, Judæa, January 18th, 1864 (*H. B. T.*).



RED WING.
TURKUS ILACUS

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TURDUS ILIACUS.

(REDWING.)

- Turdus iliacus*, Linn. Syst. Nat. i. p. 292 (1766).
Turdus mauvis, Müll. Syst. Nat. Suppl. p. 141 (1776).
Sylvia iliaca, Savi, Orn. Tosc. i. p. 215 (1827).
Turdus betularum, Brehm, Vög. Deutschl. p. 386 (1831).
Turdus vinetorum, Brehm, Vög. Deutschl. p. 386 (1831).
Turdus gracilis, Brehm, Naumannia, 1855, p. 281.
Iliacus illas, Des Murs, Ool. Ornith. p. 293 (1860).
Iliacus minor, Des Murs, Ool. Ornith. p. 293 (1860).

Grive mauvis, French; *Rothdrossel*, German; *Rosciolo*, Italian; *Malvitz*, Maltese; *Ræddrossel*, Danish; *Rödvinge Trast*, Swedish; *Rædvinge*, *Bægtrast*, Norwegian; *Punasüpi-rastas*, Finnish; *Drozdoriechowyi*, Russian; *Drozd rdzawoboizny*, Polish.

Figuræ notabiles.

Montb. Pl. Enl. iv. pl. 51; Naum. Vög. Deutschl. ii. taf. 67. fig. 1; Gould, B. of Eur. ii. pl. 78. fig. 2; Yarr. Brit. B. p. 198; Kjærb. Orn. Dan. Afb. xvi. fig. 6; Schl. Vog. Nederl. pl. 109; Fritsch, Vög. Eur. tab. xviii. fig. 5; Gould, B. Gt. Br. pt. vi.; Sundev. Sv. Fogl.

♂ *æstiv.* suprâ olivascenti-brunneus, scapularibus et tectricibus alarum dorso concoloribus, his majoribus extûs cineraceo lavatis: remigibus saturatè brunneis, extûs cineraceo lavatis, secundariis latiùs: caudâ pallidè cinerascienti-brunneâ: loris fulvescenti-albis: supercilio lato pone regionem paroticam producto albo: regione oculari et paroticâ brunneâ angustè albido striolatâ: genis et gulâ albis, vittâ mystacali angustâ brunneâ: subtûs albescens, gutture imo et pectore superiore fulvescente tinctis et maculis triquetris brunneis notatis: corpore laterali et subalaribus lætissimè ferrugineis: subcaudalibus albis medialiter brunneo notatis: rostro saturatè brunneo, mandibulâ versûs basin flavicante: pedibus cinerascienti-carneis: iride brunneâ.

♂ *hiem.* similis ptilosi æstivæ, sed saturatior, subtûs etiam magis fulvescens: loris et supercilio distinctè fulvescente tinctis, et tectricibus alarum fulvo apicatis et extûs lavatis, secundariis intimis albido terminatis.

Juv. similis adultis: dorsi plumis longitudinaliter fulvo antè apicem nigrum striatis: uropygio olivascenti-brunneo unicolori: pileo saturatiùs brunneo, utrinque suprâ supercilium nigricante: regione paroticâ nigricante, distinctè fulvo striolatâ: subtûs albicans, pectore lætè fulvescente, maculis nigris rotundatis notato: subalaribus et corpore laterali pallidè aurantiacis: tectricibus alarum olivascenti-brunneis, minimis et medianis longitudinaliter aurantiaco fulvo lineatis, majoribus remigibusque pallidè aurantiaco-fulvo limbatis.

Adult, summer. Above olive-brown; wing-coverts edged with greyish brown: quills dark brown, the outer

web edged with dark grey, the secondaries rather more so than the primaries; tail similar to the back; a broad line from the beak passing above and behind the eye to the back of the head dull white; region below the white eyebrow and auriculars olive-brown marked with white; throat white with brown stripes on each side; underparts white, the breast and sides marked with brown streaks, the centres of the feathers being brown; flanks and under wing-coverts rich rust-red; under tail-coverts dull brown at base, white at the tip; bill blackish brown; base of under mandible and edge of gape reddish yellow; legs greyish flesh-colour; iris brown. Total length 7·8 inches, culmen 0·7, wing 4·6, tarsus 1.

Adult, autumn. Differs from the summer bird in being rather darker in colour, in having the lores and eye-stripe tinged with rufous; the markings on the breast and underparts larger and more extended; the primaries and upper wing-coverts edged with rufous, the inner secondaries being slightly tipped with white; and the flanks and under wing-coverts much less rich in colour.

Female. Similar to the male.

Young. Similar to the adult, but the feathers on the back and scapulars have a pale yellowish white streak down the centre; upper wing-coverts broadly edged with rufous, and having a rufous spot at the tip; the secondaries being also tipped with whitish; superciliary streak not so large or clearly defined as in the adult; underparts dull white, profusely spotted on the breast with dark brown, and having a yellowish tinge on the fore part of the breast; flanks dull rufous with an olive tinge; under wing-coverts rufous; under tail-coverts dirty white.

THE Redwing inhabits during the summer season the far north, but so soon as the cold weather sets in migrates southward, spreading over the whole of Europe, returning again to its northern haunts in the spring. It has been met with as far west as Greenland, where, according to Professor Reinhardt, it has twice occurred.

In the British islands the Redwing is found in the winter season, arriving late in October and leaving again for the north as the fine weather commences, though they sometimes linger as late as May or even June. It is not a strong bird; and, according to Professor Newton, it is the first to suffer from the inclement weather, and "during some severe seasons, such as 1799, 1814, 1822, and the winters of 1838-39 and 1860-61, hundreds have been found almost starved, alike unable to prosecute their journey further south to more genial climates, or to bear the rigour of this." It has been stated to have bred in Great Britain; but Professor Newton regards these statements with doubt; the best-authenticated of these is that mentioned by Dr. Saxby, who says (*Zool.* p. 7427) that in May 1855, at Maintwrog, in North Wales, he found a Redwing's nest with four eggs, upon which he repeatedly saw the bird. In Scotland, according to Mr. R. Gray, "this species of Thrush is later in arriving on the west than on the opposite coast of Scotland. On their arrival from Norway and other countries, where they breed, they fly in considerable flocks, remaining, however, only a few days on the sea-coast to recruit before commencing their inland journey. On the Haddingtonshire coast I have seen numbers coming in from the sea in company with Fieldfares, and settling on the low-lying fields near the beach. At an early hour one morning in the month of October I recollect seeing quite a swarm of these two species covering the links at Dunbar. They were apparently fatigued, and permitted a very near approach, merely hopping out of the way a little as I walked forward. In Western Scotland the flocks are not so large, consisting for the most part of a dozen or fifteen birds. These betake

themselves to open fields during the daytime, where they feed on grubs and worms; and at nightfall they frequently roost in a group of trees, occupying some exposed situation, unless the weather happens to be very severe, when they are glad to seek the shelter of garden shrubs and bushes. In the memorable frost of 1860-61 great numbers perished during a snow-storm of unusual severity. My friend Dr. J. Grieve informed me that he had seen at Dunoon, in Argyllshire, twenty or thirty dead Redwings lying huddled together under a laurel bush after the storm. The Outer Hebrides are visited also by small flocks of this species, which appears to linger there even longer than it does on the mainland. The late Dr. Macgillivray has stated in his work on British birds that he has seen specimens on the 25th of May, in Harris, the same island on which Mr. Bullock had found the Redwing breeding in 1818. This circumstance is mentioned in Fleming's 'History of British Animals,' the author having been informed by Mr. Bullock in a letter dated 25th of April, 1819. A manuscript note in Mr. Dunn's copy of Messrs. Baillie and Heddle's work states that the Redwing breeds in these islands."

In the Færoes, according to Müller, it appears regularly in April and May in flocks, but soon leaves. In the autumn it comes in September. In 1847 numbers came on the 2nd of April; and in 1859 they arrived later, but remained longer, as the winter was so severe in Iceland. In Norway it is common; and, according to our friend Mr. Robert Collett, it prefers in the interior the subalpine region to the lowlands, and breeds numerous on the fells from the upper portion of the fir-region up into the birch-region, but also in small numbers in the lower regions, as for instance at Smaalehnene. On the west coast it is found commonly to the sea-coast, and up northwards to the Russian frontier. In spring and autumn it visits the lowlands in large flocks, and a few remain over the winter in the south and on the west coast. At Christiania it arrives tolerably regularly about the middle of April. In Sweden, according to Nilsson, it occurs only in the high north during the summer season, migrating southward in the autumn; but Dr. Holtz quotes two instances of its having nested on Gottland. Pastor Sommerfeldt found it common on the Varanger Fiord during the summer season; and Mr. Wheelwright records it as equally common with the Fieldfare in Quickjock, Lapland. In Finland it is more abundant in the northern than in other portions of the country; but Von Wright states that it is very common near Kuopio, especially at Haminanlaks. Dresser found it numerous near Uleåborg, where it breeds, though not in such large numbers as the Fieldfares. It does not appear to be very common in Russia. Mr. Sabanäeff records it as rare in the neighbourhood of Moscow, though not so in the Government of Perm. It increases in number annually, and is said to breed in the Government of Tula. Sabanäeff found it breeding all through the Perm Government, except in the black-soil districts; but it is there much rarer than the Song-Thrush. In Poland, our friend Dr. L. Taczanowski informs us, "it is very numerous in the spring and autumn, but does not remain during the summer or winter. A few, however, probably breed in the northern part of the Government of Suwatki; for I heard a male sing in the month of June for several successive days in the same locality, but could not find the nest. Tyzenhauz says that a few breed in Lithuania. Professor Bogdanoff records it as found near Kazan during migration, appearing in spring in the month of April, whereas in Poland it arrives about the end of March. It does not breed in South-eastern Siberia."

According to Naumann it passes through Germany on its way to and from its winter

quarters. Early in October single birds appear, and are followed by smaller and larger flocks, which in mild seasons remain until the middle of November, and then wander further southwards: occasionally one or two remain over the winter. From the middle of March to the end of April, when the snow melts and the ground thaws, they again pass on their way to their summer haunts. Mr. A. von Homeyer states that instances are known of its having remained to winter in Pomerania; but this will only happen in exceptionally mild seasons. According to Kjærbølling they arrive in Denmark from the north early in October, remain three or four weeks, and migrate further south, returning again late in March, and remaining two or three weeks. Occasionally one or two winter in Jutland. Mr. Fischer says that of late years this species has been more frequently met with in Denmark during the winter season. It passes through Holland and Belgium in October, and returns again in March; and the same may be said as regards the north of France; but in Southern France it occurs during the winter, remaining during the severe cold, frequenting the forests in flocks in company with Fieldfares. The Rev. A. C. Smith includes it in his list of the birds of Portugal; and both Lord Lilford and Mr. Howard Saunders met with it in Spain during the winter season. Bailly writes that it passes through Savoy late in the autumn, migrating southward as the weather becomes colder, and reappearing again in the early spring. Salvadori and Doderlein record it as a winter visitant to Italy and Sicily, being numerous in the northern provinces, and becoming less abundant in the south, until in the latter island, as well as in Sardinia and Malta, it becomes of rare and occasional occurrence. Salvadori adds that he suspects it may sometimes breed in Italy, founding this opinion upon the fact of a single specimen having been killed near the Adriatic in August 1871. Respecting its occurrence in the island of Malta Mr. C. A. Wright writes as follows:—"Rare; does not make its appearance every year. In November and December 1861, I obtained two specimens, and Mr. J. Horne another on the 2nd of the latter month."

In Greece, according to Von der Mühle, it is the commonest Thrush during the winter; but Lindermayer denies this, and says that this cannot be the case, as it occurs only rarely amongst the flocks of Song-Thrushes. Lord Lilford met with it at Epirus during the winter. In Southern Germany and on the Danube it is noticed during the season of migration; and Mr. Robson has found it in the neighbourhood of Constantinople. Professor von Nordmann writes that it passes New Russia in the autumn, but that a few stragglers remain there during the winter. Those that pass onward will probably winter in Persia, as they come back again in March on their way to the north. The Redwing has not been recorded from Egypt; but, according to Loche, it arrives in Algeria in the autumn and remains only two or three months, frequenting, in large flocks, the wooded parts of the country. It has been recorded as far west as the Canaries, where, according to Berthelot, it occurs during the winter.

With regard to the limit of its eastern range, it has been found in Eastern Siberia by the Russian travellers; and Dr. Radde met with two birds of this species in the Kultuk valley on the 2nd of November, 1856. The female had been feeding altogether on the berries of *Vaccinium uliginosum*. Von Middendorff also saw it, but only procured one example, near Irkutsk, late in September. It has likewise been met with in India; and the late Dr. Jerdon wrote that the Redwing has lately been found in the North-west Himalayas, but very rarely. But in Kohat, as

he was assured by Mr. Blyth (according to a very good observer, the late Lieut. Trotter), it is a regular winter visitant in large flocks.

In its habits the Redwing is a true Thrush, differing but little from *T. musicus*. Respecting its breeding-habits in Norway we give the following notes from our friend Mr. Robert Collett:—“It never nests in colonies, each pair building alone in their part of the wood; but though caring but little for the society of others of its own species, it appears to seek that of the Fieldfare, and wherever there is a colony of this latter species one is sure to find a pair of Redwings, who appear to find protection in the neighbourhood of their larger and more numerous congeners. In the eastern part of Norway one invariably finds the nests on bushes or low trees; but in the barren, treeless portions of our west coast the nest is often placed on the ground, between stones, or on fences, or, on the fells, on the stunted birches.

“Like all the Thrushes, the old birds show the greatest anxiety if one approaches their nest or young, make a peculiar noise by striking together their mandibles, utter a mournful cry, flutter on the ground, and allow one to approach within a pace or two of them. The foundation of the nest consists of dried twigs and earth, and the nest itself of dry straws. The eggs are almost always six in number; they are deposited from early in May into June. I found the first eggs in 1856, on the 9th of June; in 1859, on the 19th of May; in 1860, on the 27th of May; in 1862, on the 8th of May; and in 1864, on the 2nd of May.”

Although nesting so far north, it has been known to breed even as far south as Galicia, where it was found by Count Casimir Wodzicki, and in Anhalt, where Pässler found the nest.

The eggs of this species resemble those of the Fieldfare, but are smaller in size, and, as a rule, not so richly marked, but approach somewhat in character those of the Blackbird. A series in Dresser's collection, now before us, vary in size from $\frac{3.7}{4.0}$ by $\frac{3.0}{4.0}$ to $1\frac{2}{4.0}$ by $\frac{3.3}{4.0}$ inch. Dr. E. Rey sends us the measurements of twenty-eight eggs in his collection, which average 26.1 by 18.5 millimetres, the largest measuring 28.0 by 18.5, and the smallest 23.5 by 19.0 millimetres respectively.

In the north of Finland, where this bird is common, Dresser repeatedly heard its song, which, though sweet, is less melodious than that of the Song-Thrush, and scarcely good enough to justify its appellation of “*Nordens Näktergal*,” or the Nightingale of the North. It consists of several clear, melancholy, flute-like notes, and is followed by a low twitter, only to be heard when close to the bird. Von Wright very correctly gives the syllables *trui*, *trui*, *trui*, *triritri*, as representing its note. When singing, it is generally perched on the very top of a fir tree; and in the solitude of the northern forests its notes appear very sweet, more especially as there are so few good songsters in those regions.

The food of the Redwing consists during the spring and summer chiefly of insects, and especially of the various species of *Helix*; during the autumn and winter, however, they feed on the various sorts of wild berries, and such insects as they can procure at that season of the year. Thompson, in his ‘Birds of Ireland,’ gives the contents of the stomach of a Redwing examined by him as consisting of the remains of insects, two shells of *Helix cellaria*, and one of *H. radiata*; the stomachs of two, obtained in December, exhibited worms, vegetable food, chiefly bits of grass, remains of coleopterous insects, and several *Limacelli*; one had, in addition, two of

the *Bulinus lubricus*, a *Helix hispida*, and three of *H. rufescens*: some of these shells were perfect.

The figures in the Plate are taken from a specimen in Dresser's collection. The descriptions of the adult breeding bird, and also of the young, are from examples shot in Norway and Russia by our friend Mr. E. R. Alston—that of the winter dress being from a specimen sent by Mr. A. Benzon, of Copenhagen. The exact localities of these birds are given below.

In the preparation of the above article we have examined the following specimens:—

E Mus. H. E. Dresser.

a, b, c. Turin, November 1870 (*Count Turati*). *d, e.* Cookham, Berkshire, February 1869 (*J. Ford*). *f, ♀.* Helsingør, October 1870 (*A. Benzon*). *g, ♀, juv.* Ijma river, Russia, July 3rd, 1872 (*E. R. Alston*).

E Mus. J. H. Gurney.

a, b, c. Greatham (*J. H. G.*). *d.* Somerset.

E Mus. H. B. Tristram.

a, b, c, d. Durham (*J. H. Gurney, jun.*).

E Mus. E. R. Alston.

a. Glendonnie, Scotland. *b.* Lien, Norway (*E. R. A.*).

E Mus. Feilden and Harvie Brown.

a. Dunipace, Falkirk. *b.* Woolmer Forest. *c.* Maristuen, Norway (*J. A. Harvie Brown*).



FIELDFARE
TURDUS PILARIS



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(FIELDFARE.)

- Turdus pilaris*, Linn. Syst. Nat. i. p. 291 (1766).
Alauda calandrotte, Müller, Syst. Nat. Suppl. p. 137 (1776).
Sylvia pilaris, Savi, Orn. Tosc. i. p. 209 (1827).
Arceuthornis pilaris, Kaup, Natürl. Syst. p. 93 (1829).
Turdus subpilaris, Brehm, Vög. Deutschl. p. 384 (1831).
Turdus juniperorum, Brehm, Vög. Deutschl. p. 385 (1831).
Turdus musicus, Pall. Zoogr. Rosso-Asiat. i. p. 454 (1831).
Merula pilaris, Selby, Brit. Orn. i. p. 161 (1833).
Turdus fuscilateralis, Brehm, Naumannia, 1855, p. 281.
Planesticus pilaris, Jerdon, B. of Ind. i. p. 530 (1862).

Fieldfare, *Fulfer*, *Felt*, *Pigeon-felt*, *Feltyfare*, *Fendyfare*, English; *Blue Pigeon* or *Big Felt*, in Ireland (*Thompson*); *Liatruisg*, Gaelic (*R. Gray*); *Grive Litorne*, French; *Wachholder-Drossel*, German; *Kramsvogel*, Dutch; *Cesena*, Italian; *Turdu polinu*, Sicilian; *Tordo zornal*, Portuguese; *Malvitzun*, Maltese; *Snarredrossel*, *Graatrost*, *Fjeldtrost*, Danish; *Björktrast*, Swedish; *Graatrost*, Norwegian; *Räkättirastas*, Finnish; *Drozd riabinnik*, Russian; *Kwiczol*, Polish.

Figuræ notabiles.

Buff. Pl. Enl. iv. 490; Hayes, Birds Osterl. Menag. pl. 31; Naum. Vög. Deutschl. ii. Taf. 67; Gould, B. of E. ii. pl. 76; Yarr. Brit. B. i. p. 189; Kjærb. Orn. Dan. Afb. xvi. fig. 1; Schl. Vog. Nederl. pl. 107; Fritsch, Vög. Eur. tab. 20. fig. 17; Gould, B. of G. Br. part vi.; Sundev. Svenska Fogl. pl. x. fig. 1.

♂ *æstiv.* pileo colloque postico cinereis, pilei plumis medialiter nigricantibus: supercilio albo: loris nigris: genis canis, obscure albido striolatis: strigâ malari fulvâ, nigro longitudinaliter notatâ, post regionem auricularem productâ: interscapulio cum scapularibus et tectricibus alarum brunnescenti-castaneis, his paullulûm cinereo lavatis, minimis magis conspicuè notatis: remigibus brunneis, scapis nigricantibus, primariis extûs angustè cinereo marginatis, secundariis brunnescenti-castaneo lavatis: dorso postico, uropygio et supracaudalibus clarè cinereis: caudâ unicolori nigricante, ad basin cinereâ, versus apicem vix pallidiore: gutture lætè fulvescente, plumis quibusdam medialiter nigro striatis: pectoris superioris plumis et hypochondriis nigricantibus, obsoletè fulvido marginatis: pectore superiore lætiùs ochrascente, pectore imo et abdomine toto albis, hypochondriis nigricantibus, plumis medialiter nigris: subalaribus albis: rostro ferè omninò flavicante: pedibus rufescenti-brunneis: iride saturatè brunneâ.

♂ *hiem.* similis ptilosi æstivæ, sed fulvescentior, plumis omnibus obscure fulvo marginatis: remigibus cinereo distinctiùs marginatis, secundariis fulvido apicatis: corpore subtùs albicante, pectore lætè ochrascente, plumis pectoralibus et hypochondriis nigro variis, paullò rufescentibus.

Juv. similis adultis, sed saturatior : pileo saturatè cinereo, valdè brunneo lavato, nuchâ distinctiùs cinerascente : uropygio albo maculato, et supracaudalibus brunneo marginatis : interscapulio scapularibusque sordidè brunneis, plumis omnibus nigro marginatis et medialiter ochraceo lineatis : tectricibus alarum saturatè brunneis, olivaceo lavatis, albido terminatis et medialiter ochraceo lineatis, minoribus magis conspicuè notatis : supercilio fulvo : genis cineraceis, fulvo striolatis : subtùs fulvescens, pectore lætiùs colorato, gutture ferè immaculato : corpore reliquo subtùs intensè nigro maculato, abdomine sparsiùs : subalaribus albis.

Pull. nigricans, sub certâ luce brunneo nitens : dorso angustissimè fulvo striato, tectricibus alarum distinctiùs eodem colore striatis et marginatis : dorso postico et uropygio ochrascenti-cineraceis : gutture et pectore superiore lætissimè ochraceis, hoc nigricante vario, abdomine imo albicante, hypochondriis paullulùm nigro notatis.

Nestling. Above very dark brown, almost blackish, the head being especially dark, and only showing the brown tint when looked at in certain lights ; lores ochre ; cheeks, ear-coverts, and sides of the neck blackish, the former slightly streaked with ochre ; some of the dorsal feathers edged with black, and having an ochre stripe down the centre ; the wing-coverts and scapulars coloured like the back, but perhaps a little more tinged with brown, while the median shaft-stripes are much broader and widen out conspicuously towards the tip of the feather, which is also edged with buff ; the greater coverts certainly more brown in tint, with whitish edgings ; quills and tail, as far as can be seen of them, deep blackish, with very narrow whitish edgings ; lower back and rump greyish, tinged with ochre-brown ; throat and chest rich ochre, the former unstriped, but the sides of the latter entirely black ; lower breast and abdomen white, with blackish mottlings on the sides of the former and on the flanks.

Obs. The specimen from which the above description has been taken is in the collection of our friend Mr. J. A. Harvie Brown, who took it from the nest during his expedition to Norway in company with Mr. E. R. Alston. It is so young that remains of the nestling-down, which is of a pale buff colour, still adhere to the feathers of the sides of the crown, back, and rump. The legs are of a fleshy-brown colour ; and the bill is horn-brown, inclining to fleshy brown near the base, and having a white nail at the extremity. Professor Newton has been kind enough to lend us a specimen representing the next stage of development. This bird is some days older than the one above described, and is altogether lighter in coloration ; the wings and tail are more fully grown, and the down has disappeared. The following is a description of Professor Newton's bird :—

Nestling (a little older). Upper surface of the body brown, the head darker and more inclining to olivaceous, with a few fulvous shaft-stripes indistinctly showing ; the back lighter and richer brown, all the feathers plainly edged with black, and streaked down the centre with shaft-stripes of bright ochre ; the wing-coverts coloured like the back, the least ones spotted, the median ones streaked down the centre and edged with ochre, the greater coverts rather more bronzy brown, with edgings of light ochre ; quills blackish brown, externally washed with bronzy brown and tipped with whitish ; the rump dull ochre, with a very faint tinge of grey, and mottled all over with spots and streaks of paler buff ; tail blackish brown, the feathers narrowly edged with fulvous white or pure white ; lores and a very faint eyebrow dull ochre ; ear-coverts dark brown like the head, but exhibiting a few ochre shaft-stripes ; cheeks bright ochre, the feathers rather broadly edged with black, giving a somewhat mottled appearance ; throat pale ochre, unspotted ; breast rather more bright, mottled all over with blackish spots ; centre of the breast and abdomen whitish ; the flanks and under tail-coverts tinged with ochre, the former mottled all over with black ; the under wing-coverts whitish, very faintly tinged with ochre ; feet yellowish flesh-colour ; bill horn-brown, yellowish at the base, merging into fleshy brown towards the tip of the lower mandible.

Obs. The advance towards maturity, as exhibited by the foregoing bird, when compared with the tiny nestling first described, may be briefly summed up as follows:—The general colour of the plumage is browner, with the ochre shaft-stripes more developed on the back, but not so broad on the wing-coverts; the rump is mottled with pale buff; the wing is washed with bronzy brown; the chest is rich ochre, and the black spots are not so confused as in the nestling bird, but are more clearly separated, those on the lower part of the breast being much smaller and more rounded. The next stage to be described is the full-grown young bird.

Young (fully grown). Head and neck dull grey, washed with olive-brown, and mottled with blackish on the forehead, where the black centres to the feathers show plainly; interscapular region, as well as the scapulars, dull chestnut-brown, with ochre shaft-stripes, much plainer on the latter, where they occupy the centre of the feather, and widen out into an oval drop towards the apex, which is narrowly edged with black; wing-coverts dark brown, with a bright ochre shaft-stripe and yellowish edgings, the greater coverts shaded with bronzy brown and tipped with fulvous; quills blackish, washed externally with bronzy brown, which occupies the whole outer web of the inner secondaries; lower part of the back and rump dull grey, strongly tinged with ochre, especially on the tail-coverts, and showing the remains of pale mottling; tail blackish, shading into brown towards the tip of the outermost feathers, which are narrowly edged with whitish; on the under surface, however, all the feathers more or less plainly shade off into a silvery white towards the apex; lores and an indistinct eyebrow dull ochre; feathers in front of and under the eye blackish; ear-coverts dull grey, with a tinge of ochre and brown, and mottled with cross bars of black; cheeks rich ochre, with little black markings which collect on the lower side and form a tolerably distinct moustachial stripe, running along each side of the throat; under surface of the body rich ochre, shading off into white on the lower part of the breast and abdomen; the throat almost unspotted, but showing a trace of one or two blackish markings on the centre; the breast thickly covered with black spots, which become smaller and fewer in number towards the abdomen, till on the belly they are quite obsolete; the under tail-coverts whitish, with a few blackish markings at the base; under wing-coverts whitish, with a few black mottlings on the edge of the wing; bill dark horn-brown, the lower mandible yellowish at the base; feet dark fleshy-brown. Total length 9·5 inches, culmen 0·8, wing 5·4, tail 3·8, tarsus 1·3.

Obs. In this stage of plumage the young Fieldfare very much resembles the Song-Thrush, especially in the pointed ends to the tail-feathers, a character which disappears afterwards, when the rectrices become rounded; and it further resembles the last-named bird in the spotted appearance of the breast. When compared with the advanced nestling last described, its progress towards maturity is marked by the grey shade on the head and rump, as well as by the clearer development of the eyebrow and ear-coverts. The specimen last noticed is a young male, beautifully prepared by Herr W. Meves, and obtained by him in Upland on the 5th of August, 1871. A female procured on the same occasion differs in the following particulars, viz. in having the dorsal feathers edged with black (in the male only the scapulars show this peculiarity), while the hinder part of the neck exhibits the remains of whitish shaft-stripes, and the breast is more thickly spotted with black markings, which also cover the abdomen. As all these characters show that the bird is not quite so advanced, it is probable that the male attains maturity a short time before the female. The plumage gets much worn as the autumn progresses, and the bird moults into its winter dress, which is first shown by the appearance of bright golden-buff feathers on the breast, and the gradual disappearance of the ochre shaft-stripes on the back. The following is the description of a young bird of the year in its first winter's livery.

Young Male (in first winter plumage). Upper surface of the body dull brown, inclining to chestnut in the centre of the back; the nape and rump greyish, this shade of colour also extending to the upper tail-

coverts, which are slightly shaded with brown. On being held towards the light a slight ashy edging to most of the back-feathers may be perceived. The wing-coverts are also dull chestnut-brown, with obsolete greyish margins; the quills and tail dull brown, with narrow whitish edgings and tips, the secondaries being almost entirely of a dull chestnut-brown, like the back and scapulars, the tail also slightly washed with brown; lores and a narrow eyebrow golden buff; feathers in front of and under the eye blackish; ear-coverts dull greyish, tinged with brown; cheeks, throat, breast, and flanks rich golden buff, mottled with black, the two former marked with little triangular dots, which do not collect or form a moustachial streak, but extend high up the throat, the immediate chin being whitish; the sides of the breast and flanks more thickly mottled with blackish, which has on the latter a strong chestnut shade; the whole of the lower breast and belly snowy white, the under tail-coverts slightly washed with brown; the under wing-coverts and feathers on the side of the upper breast pure white; bill horn-brown, the whole of the base of the lower mandible yellowish; feet fleshy brown, the toes darker.

Obs. The above specimen is one from Tangiers in our own collection, and was presented to us by Major Irby. In the following spring, when the bird takes his adult dress, no moult takes place, but the dull edgings to the feathers are cast off and the head and rump become blue-grey, this colour also pervading the edges of the quills; the brown triangular spots on the breast gradually dilate and widen out till they occupy the whole centre of the feather; the golden tinge on the breast is not so bright, and the flanks are strongly tinged with chestnut, while the black markings on them grow more pronounced and zigzag in shape; the bill becomes bright waxy yellow, and the feet simultaneously dark fleshy brown, the toes being exactly of the same colour. These changes are exhibited in a specimen in Mr. Howard Saunders's collection, shot by Dr. Krüper in Macedonia on the 3rd of March, 1870.

Adult in breeding-plumage. Head and hinder part of the neck ashy grey, the feathers of the former part blackish in the centre, producing a mottled appearance; centre of the back, scapulars, and wing-coverts dark chestnut-brown, the latter more or less washed with grey on the outer web, the least wing-coverts especially; quills dark brown, the shafts of the primaries blackish, of the secondaries brown; the primary-coverts and primaries externally washed with grey, inclining to white on the extreme margin of the feather, the secondaries also washed with this colour, but gradually becoming more and more shaded with brown, so that the dorsal ones are almost entirely of this colour; under surface of the wing greyish brown, inclining to silvery white near the base of the quills, entire lower part of the back and rump bluish grey, lighter than the head, the shafts of the feathers whitish; the tail-coverts also grey, but somewhat darker than the rump; tail blackish brown, the outer feather whitish at the tip, but when viewed on the under side the whole of the outer web, and the inner web for a quarter of its length, seem whitish; lores buff; eyebrow whitish; feathers in front of and under the eye black; ear-coverts ashy grey, with whitish shaft-stripes; a malar stripe ochre, with a few dark longitudinal markings; under surface of the body white; the throat and upper breast rich ochre, the throat having a few black stripes in the centre, but the breast and flanks thickly spotted with black, owing to the centres of the feathers showing plainly; centre of the breast, and the entire abdomen, as well as the under tail-coverts, white, the latter broadly edged with grey on the outer webs of the feathers; under wing-coverts and axillary plumes white; bill entirely yellow, excepting a little mark of horn-brown near the tip of the upper mandible; legs blackish, with a reddish tinge; iris dark brown. Total length 10·5 inches, culmen 0·85, wing 5·8, tail 4·5, tarsus 1·3.

Winter plumage. In the winter season the plumage of the adult bird is very little different from the summer dress, except in being a little more obscure, and slightly shaded with brown on the head; the feathers

of the breast and flanks have broad fulvous-white edgings, so that the black centres to the feathers do not show so plainly.

Explanation of the Plates. The first Plate represents the fully grown young bird on the right hand, the centre figure a male in breeding-dress, and to the left hand is the adult male in winter; all these specimens are in our own collection. On the second Plate is illustrated the nestling which Mr. J. A. Harvie Brown lent us, and the young male in its first winter plumage.

THE breeding-haunts of the Fieldfare are principally in Norway, Sweden, and the northern and central parts of Europe generally; and it nests in certain localities in Poland and Germany,—the southernmost point where it has been found breeding being Bavaria, if we except the rather doubtful assertion that it nests in the Alps. In winter it is a bird of wide distribution, visiting most of the countries of Europe in considerable numbers, excepting Spain, where it is rare; to the eastward it extends into Central Asia, and has been once procured in N.-W. India.

Professor Baird, in his paper on the migration of North-American birds (*Ibis*, 1868, p. 281), mentions the present species as doubtfully occurring in Iceland; but we do not know who has ever included it among the birds of that country. Professor Newton, whose Appendix to the work of Mr. Baring-Gould's 'Iceland: its Scenes and Sagas,' is our first authority on Icelandic ornithology, does not mention the occurrence of the Fieldfare; nor, we believe, has any authentic record of its capture been received as yet. At the same time there would be nothing very surprising to hear of the bird turning up in that locality, which is accessible to the Redwing and other birds of migratory fame.

The exact date of the arrival and departure of the Fieldfare in Great Britain has been a subject of much discussion among ornithologists; but there can be little doubt that the records of these Thrushes having been noticed in September are always more or less open to question; and the usual date of the appearance of the present species is about the end of October or the beginning of November. Mr. Stevenson, indeed, in the 'Birds of Norfolk' (p. 77), mentions the 14th of October as a very early occurrence of the Fieldfare in that county, *à propos* of which statement Mr. J. H. Gurney, jun., in a letter dated "Northrepps, near Cromer, December 26th, 1871," writes to us as follows:—"Mr. Stevenson does not give an earlier appearance than October 14th; but in 1869 they were seen here by the keeper on the 2nd of that month; and Mr. Cater states in the 'Zoologist' (p. 2412) that he has seen them on the 10th of September at Waxham, in this county, which is very early." Doubtless the severity of the weather influences the arrival and departure of the Fieldfares. They leave us generally about the end of April or the beginning of May; and Mr. Howard Saunders tells us that he once shot two specimens out of a flock on the 14th of the last-mentioned month in the immediate vicinity of London. Messrs. Sheppard and Whitear make mention of one having been killed at Cromer, in Norfolk, as late as the first week in June; and White, of Selborne, records that they had in his experience once remained till June. The Fieldfare has likewise been reported to have bred in England, on apparently good authority. Mr. A. G. More thus writes:—" *Turdus pilaris* also is recorded by Mr. Blyth to have bred at Merton, in Surrey (Charlesworth's Mag. Nat. Hist. iii. p. 467); but unfortunately that gentleman did not see the birds himself." In his 'Tour in Sutherland' (i. p. 206), Mr. St. John says, "I was shown a nest and eggs from near the Spey." Other

instances of supposed nests or of the bird having been observed in summer may be found in the 'Zoologist,' the 'Field,' and other periodicals; but there is little doubt that in nearly all cases the Missel-Thrush has been mistaken for the Fieldfare." Mr. Blyth, however, has recently assured us that he is quite positive on the subject of his nest. The following account is given by Mr. Robert Gray in his 'Birds of the West of Scotland':—"There can be no doubt that the large migratory flocks of Fieldfares which visit Scotland come from the east and north-east. On this account they are first seen in Aberdeenshire and East Lothian. I have often witnessed their arrival in the latter county, having spent many seasons in watching the appearance of our migratory birds. On reaching the coast near Dunbar, for the most part about daybreak, they settle on the Links and arrange their plumage after long flight, remaining a few days in the vicinity of the rocks, which they frequent regularly at low tide. Continued frost, especially if accompanied by snow, will afterwards, however, bring them down from the higher ground, whither they had betaken themselves; and I have observed many hundreds resorting on these occasions to the beach at high-water mark, where they appear to pick up small marine animals by digging little holes in the rejectamenta thrown up by the tide. Along this mound, which was covered with a sprinkling of snow, the marks of the Fieldfares had a very curious appearance. Instances of the Fieldfare breeding in Scotland have been vaguely hinted at by Yarrell in his account of the species; but these appear to want corroboration. Numerous flocks may be seen some seasons as late as May; but these are doubtless birds that have been much further south, and are now on their return journey. On such occasions, if carefully watched, it will be found that, as a large flight passes overhead, the birds on seeing a suitable field will wheel round, and, after a short survey, alight, some on the neighbouring fir-trees, where they at once commence preening their feathers, others on the green sward, across which they hop actively in search of a meal. I have observed hundreds together near Moffat on the 29th of April; and small numbers were seen last year by Dr. Dewar on Loch-Awe side, at the foot of Ben Cruachan, in the first week of May. The Fieldfare is well known on the Outer Hebrides, but does not arrive there until midwinter; it is chiefly observed in the pasture-grounds lying on the west side of North Uist and Benbecula. It is likewise a regular visitor to the Orkneys, a few remaining on these islands all the year; but it has not been known to breed there." In the different counties of England it is found more or less frequent in the winter months, but certainly favours certain localities more than others: for instance, Mr. Gurney in the before-mentioned letter adds:—"There are neither Fieldfares nor Redwings here now." No doubt the birds are affected more or less by the cold weather; and Mr. Rodd mentions that in Cornwall "there is always a great accession of numbers throughout this and the western counties, from their retreating as far southward and westward as possible for a less rigorous climate." Thompson says:—"It is a regular winter visitant to Ireland, appearing generally in the north towards the end of October or beginning of November. In 1840 they did not arrive at the Falls, near Belfast, until the 9th of November, on the morning of which day a flock was seen there by Mr. W. Sinclair, at a great height in the air, coming from a north-easterly direction; this gentleman is of opinion that in the course of the preceding moonlight night they may have come in one flight direct from Norway. This bird remains until a late period in spring. In seven different years flocks were observed about Belfast, from the middle to the end of April, and continued until the latter period in two years (1834 and 1842),

although there had been some weeks of fine summer-like weather previously, which we might imagine would have tempted them to move northwards."

Kjærbølling states that in some winters it is common in Denmark, a few wintering there. Mr. R. Collett writes that in Norway it breeds all over the country, in the interior of the eastern portion in rather elevated districts, and in the birch-regions on the fells. Along the west coast it is found in very large numbers up to the Russian frontier. During migration and in winter it visits the lower regions in large flocks. Messrs. Harvie Brown and Alston, who made a trip to Norway in the summer of 1871, have very kindly sent us their notes on the present species, as follows:—

"The 'Trost' is certainly the most abundant species met with in Norway, whether in the valleys or in the birch-region of the fjelds. We found it breeding as high as the birch trees extend, and occasionally even higher; not unfrequently we observed birds among the dwarf birch (*Betula nana*) of the high fjelds; and one nest was found in that region on the bare unsheltered face of a lichen-covered rock." The accompanying remarks were published by Messrs. F. and P. Godman in their well-known paper on the birds observed by them near Bodö:—"A plentiful bird about Bodö, breeding there in tolerable numbers. We discovered two large colonies, from which we took many eggs. The nests were usually placed from ten to fifteen feet from the ground. The first colony we discovered May 20th. On the 27th we took two nests; but as the greater number of them did not contain their full complement of eggs, we left them. On returning three or four days after, we found that the Magpies and Crows had forestalled us. This colony was situated among some willow and birch trees, on a hill in the marsh. The other colony, which we discovered some days later, was up the mountains. Besides these two colonies, we took several nests situated by themselves, and far away from what were apparently their headquarters. The latter we were careful to identify. Our attention was attracted to the second colony by the noise made by the old birds."

Nilsson says it is the commonest Thrush in Scandinavia, and is found in summer from the pine-woods of Småland and Blekinge up into the Arctic regions, being much more numerous in the north. Although large quantities migrate southward in the winter, its numbers appear undiminished; and the remaining flocks wander about the woods and places overgrown with junipers, the berries of which form their chief food during the winter. In the spring these flocks migrate northward, and are replaced by others arriving from the south. In Hewitson's 'Eggs of British Birds' is published a note by the late Mr. Wolley to the effect that he discovered unfinished nests and fresh-laid eggs of the Fieldfare near Kalix, on the 30th of May, and that the four or five breeding-places which he found were amongst very young fir trees upon the borders of the forest, and near cultivated land. He adds:—"The Fieldfare is the most abundant in Norway, and is generally diffused over that part of the country which we visited, from Drontheim to the Arctic Circle. It builds, as before stated, in society. Two hundred nests or upwards may be found within a small circuit of the forest." Pastor Sommerfelt records it as common in summer on the Varanger-fjord; and the late Mr. Wheelwright states that at Quickjock, in Lapland, it was the commonest bird in the forests, with the exception of the Brambling. Respecting its occurrence in Finland, Von Wright observes:—"It is our commonest Thrush, and is found all over the country. In Southern Finland large numbers remain over the winter, which is not the case as

far as the other Thrushes are concerned, excepting *Turdus viscivorus* in occasional instances." Dresser found the Fieldfare abundant in all parts of Finland, especially in the high north, near Uleåborg, and on the islands outside that town. Late in May and early in June they were breeding; and fresh eggs were found in most of the nests then taken. They were nesting in the low woods, chiefly near the coast, and often in low swampy places where the clouds of hungry mosquitoes rendered it almost impossible to search after their nests. They were not breeding in regular colonies, although wherever one nest was found, several others were certain to be in the immediate neighbourhood. The nests were generally placed on fir trees or alder bushes, from five to eight feet above the ground, and contained from four to six eggs. Mr. John Henry Gurney, jun., writes to us:—"When I was at St. Petersburg I took a long walk to one of the islands in July, and coming to a wood I saw a beautiful young Fieldfare hanging in a cage outside a house." It is evident, therefore, as indeed might have been expected, that the present species breeds in the neighbourhood of the above-mentioned town. According to Meyer it is common in the Baltic Provinces, where it breeds twice in the year; on the approach of the cold season it migrates southward, only occasional birds being met with in the winter.

According to Naumann it is plentiful in Germany, arriving about the middle of October in North Germany from the north-east, and migrating in a south-westerly direction. In Central Germany they pass about the latter part of October to the end of November, a few remaining over winter in mild seasons, migrating northwards in March and April with the enormous flocks that pass up towards the north-east; and by the end of April all have left. Occasionally a few breed in Prussia and Silesia. The latter statement is rather vague, considering the author; but probably at that time no certainty existed as to the fact. Since Naumann's day, however, positive evidence has been adduced; and the latest work on the birds of Germany, by Dr. Borggreve, contains the following observation: "whereas formerly it was only found in Germany during migration, for the last ten years it has been found breeding in colonies, here and there, in the eastern portion as far as Thuringia. In Western Germany it is found from the end of October to the latter half of March." Dr. Rey tells us that since 1864 it has bred near Halle, at first singly, but now in large colonies in almost all groves in the fields. Herr O. von Boenigk gives full particulars in 'Naumannia' (i. 4. p. 30) of several colonies he himself discovered, viz. four pairs near Gross Glogau in 1834, a colony about two miles from Görlitz, consisting of four or five pairs, another of about ten pairs near the large Hennersdorfer pond, and a colony of three pairs in the Leopoldshainer wood. Herr A. von Homeyer visited these breeding-places in 1863, and gives a very careful description of them in the 'Journal für Ornithologie' for 1864 (p. 289). From his notes it appears that the colonies had increased; for he speaks of from fifteen to twenty pairs in one, three in another, and fifteen in another assembly. Pastor Jäckel writes (Zool. Garten, 1868, p. 374) that the Fieldfare has been found breeding in Bavaria, which is worthy of record, as Herr von Homeyer considered that this species did not breed there. In Belgium, De Selys-Longchamps mentions that the present bird is numerous during the first frosts, appearing or disappearing according to locality during the winter season, without quitting the country. It migrates to the northward in March and April, a few pairs, it is said, remaining to nest in the higher parts of the Ardennes, and, according to M. Degland, near Berques. Schlegel states that it "arrives in Holland from the north in October, or later, in considerable numbers. It has been

found three or four times breeding near Groningen." In Alsace it is, according to Krøner, resident from November to March in the mountains and plains, and over the whole of France is a regular winter visitant. Bailly states that it arrives in Savoy in October or in November, in large flocks; and in December or January, when the cold becomes severe, large numbers leave for more southern climes. As mentioned by MM. Jaubert and Barthélemy-Lapommeraye, the Fieldfare comes to Provence about the end of November, departing again in February. It migrates in small flocks, which meet in certain localities, forming large companies, and are then observed during severe weather in the forests of Cuges and Signes, and especially in the Hautes and Basses-Alpes, where numbers are captured by snares. As we proceed towards Spain and the south-western parts of Europe, the Fieldfare becomes a rarer bird. In Portugal it is stated by Professor Barboza du Bocage to be of uncommon occurrence; and no specimen has yet rewarded the assiduous efforts of Lord Lilford or Mr. Howard Saunders to obtain examples from any of their collectors in Southern Spain. The latter gentleman observes (in 'The Ibis'), "This species certainly does occur in winter in the south-east of Spain; but in the country round Málaga and Seville I never met with it; and although I have examined bunches of Thrushes and Blackbirds without number in the markets during my search for *Ixos obscurus*, yet I never found a single Fieldfare." In a private note communicated more recently to the authors, he adds:—"Up to the present time my collectors in Andalucia have not sent me a single specimen, though particularly requested to look out for it; and when I do receive the bird, it will most likely be from the south-eastern provinces." Major Irby informs us that according to his experience also it is a scarce bird in Andalucia; but he has known of its occurrence once near Gibraltar, in December. To the same gentleman we are indebted for a specimen from Tangiers, where, he tells us, it also comes occasionally in winter; and, according to Loche, it occurs accidentally in Algeria, especially on the slopes of Zaccar. Mr. C. A. Wright says that in Malta it is "the latest of the Thrushes which visit the island in the winter. It is seldom seen before January, when a few are taken every year. It generally lingers a few weeks." Professor Doderlein observes that this species is but little known to Sicilian sportsmen, being often confounded with its congeners. It is, however, found in somewhat scanty numbers in the more alpine portions of the island, descending to the plains in winter. In the spring all take their departure for the north. Its appearance in Sicily is very irregular. Miná records an exceptional occurrence in January 1856, in the Madonie, where in previous years none had been observed; and the same thing happened near Palermo in the months of January and February of 1864 and 1867. By the middle of February they had all departed. It does not appear to be a frequent visitor to Sardinia. Count Salvadori, in his work on the birds of Italy, writes as follows concerning the Fieldfare in that country:—"When cold is intense, many of these birds arrive in Italy in company with other Thrushes; and every year this species is very abundant in Piedmont and other subalpine regions; on the other hand, in Central Italy they are generally scarce; at least they remain about the mountains, and it is only in very cold weather that they descend to the plains in any numbers. It would appear that the Fieldfare occasionally nests in the Alps; and this fact is also affirmed by Perini. They make their nests in high trees, laying from four to six eggs, of a greenish blue colour, with rusty markings." In Styria, according to Seidensacher, it appears in October or November, occasionally in large numbers,

but at other times is not numerous; in mild winters it remains there, leaving for the north in the latter part of March. Lord Lilford, in his essay on the birds observed by him in the Ionian Islands and Epirus, remarks as follows:—"I, on one occasion only, saw this species in these parts; this was near Kataito, in Epirus, on the 23rd February 1858." Dr. Krüper writes to us that he has found it occasionally in Greece during the winter; and Lindermayer says that it arrives with other migrants in that country during severe winters, but is certainly rare in the Peloponnesus and on the islands. In Turkey, Messrs. Elwes and Buckley record it as plentiful during the winter in suitable situations; and Mr. Robson, of Ortakeuy, sends us the following note:—"These birds are numerous in European and Asiatic Turkey, where they arrive early in the autumn, leaving us about the middle of April; they are never seen in summer. Quantities are shot by sportsmen in the winter for the table. I have noticed that they feed much on bare mountains."

Professor Nordmann says that it is very common during winter in Southern Russia, arriving in the autumn in large flocks with the Missel-Thrush (*Turdus viscivorus*). He further states that he has killed individuals near Odessa a third larger than the ordinary-sized birds of this species. Professor Kessler says that it "arrives in Podolia, Volhynia, and Kiew in large numbers in October and November, and again in March and April. As far as I know, none winter with us at Kiew; but a few remain through the summer." According to Professor Bogdanoff it is very common in the Governments of Simbirsk and Kazan. It arrives at Kazan about the same time as the Missel-Thrush, at the end of March or early in April. It nests on the edge of the forests, in bushes and near groves of mixed non-evergreen and conifer trees, as also in the woods in the valley of the Volga, as far as Samarskaia Luka. Often several pairs inhabit a grove, building their nests a short distance from each other. . . . They leave later than the other Thrushes, about the latter half of October (old style), and even stay till the early part of November, when the ground is covered with snow, should the mountain-ash berries be plentiful. Dr. L. Taczanowski has sent us an interesting note:—"The Fieldfare is very common in Poland throughout the year: in summer they disperse through the forests and groves; but in autumn they collect in large flocks in places where berries are found, and especially where junipers are common, these berries forming their principal food in winter, as, for instance, near Cracow and Lowicz. Thousands are taken in snares, and fill the markets in the large towns. At this season their flesh is much esteemed; it is aromatic and strongly impregnated with a flavour of juniper. They begin to nest early in April; and the young are hatched early in May. At the end of May, as soon as the first brood leave the nest, the parents begin to build a second one. The latter is generally placed in a fir or alder of medium size, usually about halfway up, in one of the main forks. It occurs in Southern Siberia, but is not so common as in Europe. Specimens procured by Dr. Dybowski in Dauria and Lake Baikal are similar to our European bird." Dr. Henderson did not meet with the Fieldfare during the Yarkand Expedition; but Dr. Leith Adams records it as tolerably common in the oak- and pine-forests of Cashmere, though doubtless, as Dr. Jerdon suggests, only in the winter. A specimen exists in the Indian Museum from Saharunpoor, collected by Dr. Jameson; and this, we believe, still remains the only recorded instance of its occurrence within Indian limits. We have seen a few specimens of the Fieldfare from Turkestan, collected by Severzow; and Dresser, who is making a special collection of Thrushes, possesses one

of these examples. De Filippi did not obtain it during his journey through Persia; but Messrs. Dickson and Ross procured a single specimen at Erzerum on the 1st of April.

Canon Tristram says that in Palestine he only "met with it once or twice, in winter." His collection contains a specimen from the vicinity of Jerusalem. Captain Shelley, in his work the 'Birds of Egypt,' writes:—"The Fieldfare is a winter visitant to Egypt. I saw a specimen at a bird-stuffer's shop at Alexandria, which had been killed in the man's garden that winter (1870); and he told me that it was common there during the winter months."

The breeding-habits of the Fieldfare are only to be observed in the north and east of Europe; for in every other part of the continent the bird is scarcely ever known as other than a winter visitant. Mr. Wheelwright, who writes from Quickjock, in Lapland, gives the following account of the bird:—"It was, next to the Brambling, the commonest bird in these forests; and its hoarse laughing cackle (for I never heard this bird make the faintest attempt at a song) followed us wherever we went in the fir-forest (and I never saw the Fieldfare breeding anywhere else). These birds are, in fact, the greatest nuisance to the collector in these woods. They did not breed here in colonies; for, although the nests are seldom far apart, we never found two in the same tree. I think no Thrush's egg is subject to so much variation as the egg of the Fieldfare; and it would be almost impossible to describe it better than that it much resembles the egg of the Blackbird, but is usually more highly coloured. We took our first nest on May 25th, and our last on July 7th; but at this time some of the young were flyers." Von Wright, who, it will be seen, distinctly refers to the song of the bird, thus writes concerning it:—"It is fond of the neighbourhood of cultivated land, birch-woods, or those wherein birch and pine are mixed; and it sometimes breeds in colonies. Its song is poor, and is uttered by the male when on the wing; but its harsh cackling note is very loud: the call-note is a softer *quiqui*. When hopping on the ground it often jerks its tail and wings, but when sitting on trees only moves the former."

For a further note on the habits of the Fieldfare, we are indebted to Messrs. J. A. Harvie Brown and E. R. Alston, who state as follows:—"The nests of the Fieldfare are placed in all kinds of situations, in birch, alder, pine, and other trees, in outhouses, in heaps of firewood or rubbish, at two or three feet from the ground, or, in the pine-woods, as high as sixty feet. They bear a general resemblance to those of the Blackbird (*T. merula*), and are composed of long, fine, dry grass, with a coating of mud or clay between the outer and inner layers of grass. This mud seems to be carried by the birds to the nest in the form of small round pellets, several of which we found in a half-finished structure. A few nests have twigs of birch or other trees amongst the materials of the outer layer, others a few sprays of moss; but these are generally wanting. The eggs were taken fresh, from the middle of May until the end of June, the first colony found by us being on the 25th of May. Great variety is apparent in the specimens selected for our collections, both as regards size and coloration; some are not larger than average eggs of the Redwing (*T. iliacus*), while others are quite as large as those of the Missel-Thrush (*T. viscivorus*). Five or six seems the usual number; but in one nest no fewer than seven were found. The birds' behaviour in their breeding-haunts is bold and noisy in the extreme—very different from the shy retiring habits of the Redwing. If a Hawk flies over a colony, all are at once silent; but if a Hooded Crow (*Corvus cornix*) appears, the noise is redoubled, and the bold birds attack the intruder and drive him off, stooping down at him like little Falcons. One day we came on a

wounded Hooded Crow, on the ground, which was running the gauntlet between some thirty or forty swooping chattering Fieldfares. When we first found the Fieldfares breeding we noticed that they frequently *sung on the wing* as they flew to and fro over the wood, uttering a rather pretty low warble, which, however, was constantly interrupted by their usual harsh note. As we did not observe this habit later, we think it likely that it is confined to the season of courtship, and abandoned when the female begins to sit. On many occasions we found the nests of this bird partially destroyed and the eggs broken and emptied; but we failed to discover the cause." The observations above recorded were made during the recent trip of the two gentlemen mentioned to Norway; and Mr. Robert Collett writes to us concerning the species as observed by him in the same country:—"In treeless localities, as for instance in Bergens Stift and further north, it builds on the ground, placing its nest on the edge of a rock under heather, or else on the shepherds' huts, or fences near the houses. In Valdres a milk-woman found a nest in a milk-pail far inside the dairy-hut. She placed the pail near the opening in the wall, and the old birds used to come in and out, and finally brought up their young in safety." Before closing our remarks on the nesting of the Fieldfare in Norway, we must cite the account given in the 'Zoologist' for 1850 by the Rev. A. C. Smith (p. 2046):—"By the time I reached Norway (the beginning of June) the season was too far advanced to give me much hope of obtaining any rare eggs. One of the few nests which I was fortunate enough to find with eggs was that of the Fieldfare. It was within three or four days of my landing in the country; and I was wandering with my gun on a small island, in the midst of a roaring torrent, and admiring the activity of some little Wild Ducks just hatched, which were swimming merrily about with their anxious mother, who did not seem to approve of my inquisitiveness, when the loud chattering of some Fieldfares attracted me to a clump of trees in the middle of the island. After a very little search I descried the nest, about twenty-six feet from the ground, in an alder tree. I soon climbed the tree and brought down the nest, which contained five eggs. The nest resembled that of a Blackbird (for I pulled it to pieces and examined its make thoroughly); only it was considerably larger and much more neatly made; it was also extremely thick, and very securely fixed in the fork of a tree. This I found to be invariably the case with these nests; for I examined many others afterwards, though I was never again fortunate enough to find any eggs. Those which I now obtained were very difficult to empty of their contents, as the young birds were nearly ready for hatching; however, by making a large hole on one side of the egg, I succeeded pretty well; and they are now safely housed in my cabinet, with no damage from the two thousand miles of shaking they have undergone in a carriage without springs, on some of the worst roads in Europe. The eggs, in colour, size, and shape, very much resemble those of the Blackbird. I have been comparing them, by placing them side by side; and I find the ground-colour of the Fieldfare somewhat greener, and the markings somewhat redder, the latter amounting rather to blotches or spots than specks or streaks; the shape of the Fieldfare's egg, too, is a trifle rounder than that of the Blackbird, in this respect more nearly resembling that of the Song-Thrush. Comparing it with my own specimens, the figure in Mr. Hewitson's admirable work is much too red, the ground-colour being not sufficiently apparent, and the spots of red being far too numerous, and of too light a colour: but the eggs of this genus vary so much that perhaps the figure there given may be as correct a type as my own; I would remark, however, that the specimens of this

egg in the Museums of Christiania and Trondhjem are identical in colour with my own, and that they approach far nearer to the figure Mr. Hewitson gives of the eggs of the Redwing than to that of the Fieldfare. I climbed many other trees, to inspect the nests of the Fieldfares, and found many with young birds. I was much struck by the parental love and undaunted boldness of the old birds, who would fly round and round, and dart at me within a few inches of my hat, screaming and chattering as loudly as they could—so very different from the wild, unapproachable bird which so often baffles the schoolboy in the winter. Fieldfares are certainly the most numerous birds in Norway; and we may hear them chattering and clamouring from every cluster of low trees and bushes in the vicinity of a torrent. I have noticed that they usually build in the neighbourhood of a stream, and always in society. Mr. Hewitson says that the number of nests in one colony sometimes amounts to upwards of two hundred. I have never seen above eight or nine nests together.”

Dresser, who has had opportunities of observing the breeding of the Fieldfare, gives the following extract from his note-book:—“The nest itself is constructed of coarse grass worked together with earth, and lined with fine grass—in general appearance considerably resembling that of the Ring-Ouzel. Once, in Northern Sweden, near Luleå, I found a nest of the Fieldfare placed in the hollow top of a rotten stump, not a foot above the ground. This nest was very large, the foundation filling entirely the hollow portion of the stump. Whenever an intruder approaches their nest the old birds fly round, uttering, like the Missel-Thrush, harsh and loud cries; and thus it is easy to discover their breeding-place.”

We have great pleasure in giving the following notes from the pen of the late Mr. John Wolley, which will shortly be published in the second part of the ‘*Ootheca Wolleyana*,’ and for this privilege we have to thank our kind friend Professor Newton. The first observation refers to a nest taken by Mr. Wolley himself at Piteå, on the 27th of May 1853, concerning which he writes as follows:—“I took this egg between Rosvik and Ervnäs, having just seen the bird leave the nest and sit on a tree close by. It was in a fir tree, within reach from the ground. Other nests were in neighbouring trees; but of several which I examined, none had eggs, except this. They were made of coarse grass and mud, lined with fine grass. The old Fieldfares kept flying from tree to tree; snow was in deep wreaths beneath the trees.” The second note refers to four eggs taken at Råneå, on the 27th of May 1853, and continues:—“These eggs I took in the afternoon between Persö and Råneå. There were several nests, but two only had eggs. The trees were young spruce, the nests generally not higher than my face. The birds were flying in trees near, all the time I was at the place, one with materials for its nest in its beak first attracting my attention. I shot one; but I know not which nest of those around me belonged to it. The trees were open, and the nests at intervals, perhaps, of several trees.” The next lot of eggs mentioned in the catalogue are several from Kalix and Saivits, taken on May 30th, 1853, to which the following note is appended:—“All the above I took this day in the drive from Kalix to Haparanda. Leaving Kalix gästgifvaregård at three o’clock A.M., I presently saw a Fieldfare descending with its kind of song towards some young firs bordering an open field or two; and amongst these trees I found six or eight nests. The bird was sitting upon the first nest; her side face was towards me, and I almost caught her upon her four eggs. Several of the nests were not finished; but I found one with three, and two with five eggs each. This same

day, near Saivits, a Fieldfare crossed the road, with its harsh cry, towards some likely-looking young firs; and going to them I found a nest with four eggs, near the top of a twenty-foot spruce. The day was cold and rainy; so I did not stay to look for more nests; but just as I was leaving the spot five or six birds flew rapidly homewards in great alarm." We much regret that space does not allow us to quote *in extenso* the whole of the notes which Professor Newton has placed at our disposal; but the catalogue successively refers to four eggs taken at Püjkyla, in West Bothnia, on the 4th of June, 1853, one at Matarengi, on the 5th of June, "within two Swedish miles of the Arctic circle," and two nests of four and five eggs from Muonio Cefvrebys, in Eastern Bothnia, obtained on the 16th of June. Then follows in order an account of three eggs from Muoniovaara, in West Bothnia, taken on the 8th of July, 1853, concerning which a note is given:—"The nest was at some height in a fir tree. It has more mud in its construction than a Redwing's, and is lined with beautifully white grass, of course of last year's growth." Afterwards mention is made of eggs taken by Mr. Wolley or by his collectors; and to the record of one from Naitka Uoma, on the 10th of July, 1854, is appended the following note:—"Being nearly ready to hatch, this is the only egg I took the trouble to blow, as it is unusual in its colouring. We found a good many nests at a good height in trees in different parts of the wood at the foot of the cliff, where are Hawks and Buzzards, near Naitka Uoma, yesterday the 10th of June, very early in the morning. I saw the birds of some of the nests, and heard them in other cases. No one nest was near the ground."

In England all observations on the habits of the Fieldfare have necessarily been made in the winter; yet some very excellent accounts have been published, especially that given by the late Professor Macgillivray in his 'History of British Birds' (ii. p. 108), from which we make the accompanying extract:—"About the end of October, sometimes in the beginning of November, the Fieldfares make their appearance in the northern and eastern parts of Britain, where some of them remain all the winter and spring, while others disperse over the country. In the wooded parts they seem to roost at night on tall trees; at least I have seen them so roosting; but Montagu affirms that they repose on the ground, which may be the case; and certainly they must sleep there, or on rocks, in the Hebrides, where they are met with during the cold season. I know no place where one can study their habits more effectively than in the neighbourhood of Edinburgh, where they are met with in flocks of from several hundreds to three or four individuals. You see them at early dawn flying off to the fields in a loose body, or meet them there even in the dim twilight; but it seems improbable that they remain at night in the open fields, as they are never observed to crouch in the manner of the Larks, Pipits, and other birds that repose on the ground. Their flight, which is easy and rather slow, is performed with little undulation, by quickly repeated flaps of the wings, the bird spreading out those organs, making about twelve short flaps, and as it were intermitting one or more. In this manner they proceed, uttering a kind of chuckling chirp, until they arrive over a field on which they have a mind to settle, when they perform several circling evolutions, and at length alight. After settling, each is seen to stand still, with its wings close but a little drooping, its tail slightly declined, and its head elevated. It then hops rapidly a few steps forward, stops, picks up a seed, an insect, or other article of food, and again proceeds. They generally move in the same direction, always facing the wind if it be high; and those in the rear, especially if left far behind, fly up to the front. When alarmed, they all

stand still for a short time, some utter a low scream, and presently all fly off to a distance, or alight on the tall trees in the neighbourhood. There they sit gracefully on the twigs, with their tails declined, and generally with their heads all directed one way, unless they have settled for the purpose of resting or amusing themselves after procuring a sufficiency of food. In fine weather they often enact a concert of long duration, which, although their song is neither loud nor melodious, is very pleasant. When they are upon trees, their attitudes resemble those of the Blackbird; but they do not frequent bushy places, woods, or gardens, for the purpose of picking up snails, worms, or larvæ, but repair to the open fields and meadows, where it is amusing to see them in calm weather hopping about in all directions, stopping now and then to pick up their food, or to look around them. In this respect they resemble the Song-Thrush, as well as the Redwing and Missel-Thrush, with the two latter of which they often temporarily associate. They are very shy, seldom allowing a person to approach within a hundred yards in an open field, although when on trees they are somewhat less suspicious. In the former situation they keep at a distance from the hedges or walls, and fly off in a body; but in the latter several individuals remain behind the main body, and may sometimes be shot. Of the three species the Redwing seems to be the least shy, and the Missel-Thrush the most so, but all are very easily alarmed. The Song-Thrush is the tamest of the genus, and next to it the Blackbird; but these species are not gregarious, even in severe weather. When the ground is covered with snow the Fieldfares betake themselves to marshy meadows, where they are often shot in great numbers; for, although repeatedly annoyed, they return at short intervals, and persons stationed here and there along the hedges are sure of obtaining many chances. The irrigated meadows to the west of Edinburgh are a favourite place of resort to all our Thrushes in frosty weather. On the 19th of January, 1835, I there shot ten Fieldfares, five Redwings, four Song-Thrushes, and four Blackbirds. Should the pools and brooks be frozen, they repair to the woods and hedges, where they obtain a supply of hawthorn, holly, and other berries. Having neglected to note the alarm-cry of this bird, I sought an opportunity of supplying the deficiency during a snow-storm in March 1837, when I fell in with a great number of Fieldfares and Song-Thrushes, with three Lapwings, busily engaged in searching for food in a piece of marshy ground that remained uncovered. The Fieldfares when flying off uttered a chuckling cry, resembling the syllables *yack, chuck, chuck, chuck*."

Sir William Jardine, in the 'Birds of Great Britain and Ireland' (Nat. Libr., Birds, ii. p. 81), has likewise given a capital account of the species, which we quote nearly entire. "Its time of arrival," he writes, "is late in November, generally at least a fortnight subsequent to that of the Redwings; and it appears sometimes in vast flocks, and commonly in parties of not less than thirty or forty together. On arrival they often betake themselves to the vicinity of the berry-bearing trees, where they remain until the crop has been entirely stripped. The fruit of the mountain-ash is a great favourite, and, being nearly ripe about the time of their arrival, is eagerly sought after. As the winter advances, and these supplies fail, they seem to seek and frequent the more moist upland pastures, and, as the storm sets in with severity, gradually seek the lower grounds, where there is more shelter and moisture. If a storm continues for some length, they are reduced to sad extremity; many of them, in some years, perish with exhaustion and for want; and their inability to exist during a continuation of frost and snow plainly shows the necessity

and wisdom of their migration; for they never seem to attain the domestic habits of the common Thrush or Blackbird, which, when driven by distress, will seek relief with the poultry and the refuse of the farm-yard. In some severe winters we have repeatedly taken this commonly wild bird with the hand in a state of complete exhaustion. Colonel Montagu mentions the effects on this bird and the Redwing during the snow-storm of 1798:—"They became too weak to shift their quarters to a more southern climate, and thousands were picked up starved to death." When the ground has been for some time frozen up, we perceive a sure indication of the distress of the Fieldfare, by small parties, of from a pair to five or six, frequenting the open springs and shallow ditches, remaining by the river's side, and endeavouring to find about the moist edges a precarious subsistence. This forenoon (29th January, 1838), after fourteen days of intense frost, we see them sitting associated with the Snipe; and when alarmed, instead of the alert rising flight and loud chatter of prosperity, they weakly flutter off to the nearest cover, where they conceal, and will scarcely again betake themselves to flight. When the time of their remigration returns, which is sometimes not till May has far advanced, they have for some weeks been collected in bands larger than usual, as if the various flocks had been called in from the district around. They now regularly frequent some favourite feeding-ground, and may be seen scattered over the plains or passing overhead, now with renewed vigour and a noisy flight, as if preparing for the more lengthened journey which they are about to perform. Their roosting-places at night are either on trees, particularly the pines and evergreens, or on the ground. We have undoubted authority that they occasionally resort to the first for shelter; and we have often, ourselves, intruded on the sleeping-grounds in the evening. One situation is a whin cover where there is abundance of tall grass; another was a young plantation of two or three years' growth, among long heath: in both places the flock had alighted, and were disturbed so late at night as only to be known by their alarm-cry, uttered as they rose. Their roost, in these instances, was among the long grass and heath. Mr. White's observations long since corroborated this fact; for he tells us 'that larkers, in dragging their nets by night, frequently catch them in the wheat-stubbles.' Mr. Thompson mentions having disturbed them from similar places in Ireland, after they had settled for the night."

Macgillivray gives the following note about the food of the present species:—"The food of the Fieldfare during winter and spring consists of berries of various kinds, worms, larvæ, pupæ, and insects, as well as seeds of cereal and other plants. I have never seen it in corn-yards, however, even in the most severe weather; but it frequently enters gardens in time of snow, to eat the holly berries. It employs a small quantity of fragments of quartz and other hard substances to aid the trituration of its food." Thompson observes on the same subject:—"As a difference of opinion exists among authors on the subject of the Fieldfare's food, I give the contents of the stomachs of seven other individuals examined by me, and which were killed at various times and places during two seasons. Of these, one contained two *limacelli* (internal shells of naked snails belonging to the genus *Limax*, Linn.), the remains of coleopterous insects, and some vegetable matter; this last substance only appeared in the second; the third was filled with oats alone, though the weather was mild, and had been so for some time before; the fourth contained worms and bits of grass; these last, together with pieces of straw and the husks of grain, were found in the fifth (the weather was severe and frosty for a week previously); the sixth was stored

with the husks, and one grain of oats; the seventh, obtained in mild weather, was filled with the stones of haws of the white thorn. These birds have often been observed by a person of my acquaintance regaling on the haws or fruit of that plant during winter." The Fieldfare is stated by several authors to frequent turnip-fields in winter and cause considerable damage by pecking holes in the vegetables. Thus Mr. Thompson writes in the 'Birds of Ireland' (i. p. 133):—"On the 27th and 28th of January, 1848, when hard frost had for some time prevailed, and the ground was sparingly covered with snow, an accurate observer for a long time watched a large flock of from 150 to 200 of these birds, in a field of Swedish turnips at Island hill, near Strangford Lough. Lying behind the fence, hidden by a furze or whin bush, he was within four yards of the nearest, and saw that the birds generally over the field were engaged pecking eagerly at the roots of the turnip. They were very pugnacious, attacking each other like game-cocks, a couple thus engaged sometimes springing even two feet into the air; never less than about a dozen pair were thus off the ground at the same time. This singular appearance was the means of attracting from a distance the attention of my informant to the spot. When a couple were fighting, a third often came up and attacked one of them, which was no sooner done than the previous combatant, so relieved, betook itself again to turnip feeding. They never fought long, 'only two or three blows at a time,' but kept up a continual feast and continual battle. On afterwards examining the turnips in the field, he saw (to his surprise, considering their being hard frozen and the weak bills of the birds) that they had to a great extent been eaten by the Fieldfares. As water would lodge where the roots had been pecked, they would, he conceived, be rotted in consequence, to the serious damage of the crop. Five of these birds having been shot and brought to Belfast, I had an opportunity of examining their stomachs, which, even before being opened, all smelled strongly of turnips, and on being cut into were found to be filled exclusively with that vegetable. The entire flesh also when dressed partook strongly of the flavour of the turnip." Concerning this propensity of the Fieldfare Mr. J. H. Gurney, jun., writes to us:—"Mr. Stevenson (B. of Norfolk, i. p. 77) says, 'Mr. St. John (in his 'Natural History and Sport in Moray') speaks of the Fieldfares in severe weather doing much damage by feeding on the Swedish turnips, scooping pieces out with their beaks, and thus letting the frost into the roots—a charge which I never remember to have heard made against them in this county.' During the late hard weather I remarked some holes about the size of sixpences, which I might have attributed to them if they had not been so remarkably scarce this season in the parish; the keeper here has observed it, as has Mr. Cordeaux in Lincolnshire (Zool. p. 2079)."

Varieties of the Fieldfare not unfrequently occur. We have already mentioned that Professor von Nordmann has sometimes noticed individuals of a larger size near Odessa; and Macgillivray remarks:—"Slight differences as to size and colouring are observed, and albino individuals have been met with, as in the other species. In the collection of Mr. Stevenson, Edinburgh, is a cream-coloured individual, with pale reddish markings on the lower parts." Dresser's collection has a specimen, sent to him by Dr. Kütter, from Silesia, which has an admixture of white in its plumage; and Mr. Collett informs us that in the University Museum at Christiania are numerous varieties, chiefly albinos in different states of albinism, and one showing the commencement of melanism.

In Dresser's collection is a series of the eggs of this bird, taken chiefly by himself in Finland

and Sweden. In colour they most resemble eggs of the Blackbird, but are in general brighter and less closely marked; some varieties are very rich blue, marked with blood-red, others so closely spotted as to look reddish brown in colour. In size they vary from $1\frac{7}{40}$ by $\frac{3\frac{3}{4}}{40}$ to $1\frac{3}{40}$ by $\frac{3\frac{2}{4}}{40}$ inch respectively. Dr. E. Rey writes to us that the average size of forty-three eggs in his collection, taken near Halle, is 28.0 by 20.9, the largest measuring 30.25 by 20.25, and the smallest 26.25 by 20.50 millimetres respectively. The breeding-season is from the end of April to the end of May; and if the first brood be destroyed, they do not lay again. They lay generally five, seldom four, and scarcely ever six eggs.

In the preparation of the above article we have examined the following specimens:—

E Mus. Sharpe and Dresser.

a, ♂. Stockholm, March 18th, 1863. *b*, *c*, ♂, ♀, *juv.* Upland, August 5th, 1871. *d*, *e*. Cookham, Berks, February 11th and 14th, 1870 (*J. Ford*). *f*. Reading, Berks, January 3rd, 1870 (*C. Howlett*). *g*. Farnborough, Kent (*H. E. Dresser*). *h*. Tangiers (*I. H. Irby*). *i*, *j*. Central Russia (*Dr. Renard*).

E Mus. H. E. Dresser.

a. Silesia (*Dr. Kütter*). *b*, ♂. Smyrna. *c*. Jakutsk (*Dr. Renard*). *d*, ♀. Central Asia, January 18th, 1866 (*Severzow*).

E Mus. H. B. Tristram.

a. Durham (*H. B. T.*). *b*. Castle Eden, Durham (*H. B. T.*). *c*, ♀. Jerusalem, December 24th, 1863 (*H. B. T.*).

E Mus. J. H. Gurney, jun.

a. Avranches, January 4th, 1868 (*J. H. G.*). *b*, *c*, *d*, ♂. Greatham, December 8th, 1865, February 10th and March 5th, 1866 (*J. H. G.*).

E Mus. Howard Saunders.

a, ♂. Macedonia, March 23rd, 1870 (*Krüper*).

E Mus. A. Newton.

a. Hoas, Romsdal, Norway, 1857 (*E. C. Newcombe*).

E Mus. Feilden and Harvie Brown.

a. Vosservangen, Norway, May 25th, 1871, and Maristuen, Fillefjeld, Norway, June 25th, 1871 (*E. R. Alston and J. A. Harvie Brown*).

E Mus. G. E. Shelley.

a, *b*, *c*. Avington, Hampshire, December 29th and 31st, 1870, and January 1st, 1871 (*G. E. S.*).

E Mus. Salvin and Godman.

a, *b*. Eidsvold, Norway, June 1866 (*Baker*).

E Mus. E. R. Alston.

a. Muirburn, Lanarkshire (*J. P. Alston*). *b*. Stockbriggs, Lanarkshire, October 1864 (*E. R. A.*). *c*, ♂. Lien, Norway, May 11th, 1871 (*E. R. A.*). *d*, *juv.* Fillefjeld, Norway, June 25th, 1871 (*E. R. A. and J. A. H. B.*).



J. Keulemans lith.

M. & N. Hanhart imp.

NAUMANN'S THRUSH.
TURDUS NAUMANNI.

TURDUS NAUMANNI.

(RED-TAILED FIELDFARE.)

Turdus naumanni, Temm. Man. d'Orn. ed. 2, i. p. 170 (1820).*Turdus ruficollis*, Gloger, Hand. Vög. Eur. p. 180 (1834, nec Pall.).*Turdus naumannii*, Temm. Man. d'Orn. ed. 2, iii. p. 96 (1835).*Turdus ruficollis*, Middend. Reise Nord. u. Ost. Sib. ii. p. 170 (1851, nec Pall.).*Turdus dubius*, Jaub. & Barth.-Lap. Rich. Orn. Midi Fr. p. 213 (1859, nec Bechst.).*Turdus fuscatus*, Radde, Reise Süd. Ost-Sib. ii. p. 236 (1863, partim).*Turdus ruficollis*, Radde, tom. cit. p. 240 (1863, nec Pall.).*Drost naumanna*, Russian.*Figuræ notabiles.*

Werner, Atlas, *Insectivores*, pl. 17; Naumann, Vög. Deutschl. taf. 68 & 358; Ibis, 1862, pl. x.; Radde, *op. cit.* taf. vii. figs. *a, b*, taf. viii. figs. *a, b, c, d*; Jaub. & Barth.-Lap. Rich. Orn. Midi Fr. pl. to p. 213; Bree, 2nd ed. ii. pl. to p. 37; Fritsch, Vög. Eur. taf. 20. fig. 9.

♂ *ad.* pileo, nuchâ et dorso olivaceo-fuscis cinereo tinctis, pileo vix fusco striato: striâ superciliari rufescenti-cervinâ: loris fuscis: remigibus saturatè fuscis, primariis vix, secundariis et tectricibus alarum conspicuè rufescente cervino marginatis: uropygio et supracaudalibus ferrugineis: caudâ ferrugineâ: rectricibus suprâ versus apicem fusco marginatis: gulâ, pectore et hypochondriis ferrugineis, his albido marginatis: gulâ lateraliter nigro guttatâ: abdomine albo, vix ferrugineo notato, subcaudalibus ferrugineis albo apicatis: subalaribus pallidè ferrugineis, et remigibus ad apicem eodem colore marginatis: rostro fusco, ad basin flavido: iride fuscâ: pedibus pallidè brunneis.

♀ *ad.* mari similis sed suprâ magis olivacea: uropygio, supracaudalibus et caudâ suprâ magis fuscis: corpore subtùs minùs ferrugineo, gulâ albidâ ferrugineo tinctâ et conspicuè fusco guttatâ.

Juv. feminæ similis, sed corpore suprâ magis fusco-olivaceo, uropygio dorso concolori: caudâ suprâ magis fuscâ, subtùs ferrugineâ, gulâ albâ, lateraliter fusco guttatâ: corpore subtùs albo, hypochondriis vix ferrugineo notatis.

Adult Male (Shanghai, March). Crown, nape, and back greyish olivaceous brown, the crown slightly striped with darker brown, a stripe over the eye rufous buff; lores dark brown; quills dark brown, the primaries narrowly and the secondaries and wing-coverts more broadly edged with rufous buff; rump and upper tail-coverts rusty red or light fox-red; tail light fox-red, the under surface uniform foxy red, but on the upper surface most of the feathers are margined with dark brown towards the tip; throat, breast, and flanks foxy red, the feathers on the flanks slightly edged with white; on each side of the throat, from the base of the under mandible, there is a line of black spots; abdomen white, slightly marked with red; under tail-coverts foxy red tipped with white; under wing-coverts light foxy red, and the quills on the basal half broadly margined with this colour; bill yellowish at the base, otherwise blackish;

legs light brown; iris dark brown. Total length about 9 inches, culmen 0·8, wing 5·5, tail 4·1, tarsus 1·3.

Female (Shanghai, March). Resembles the male, but has the upper parts more olivaceous, the rump like the back, but tinged with rufous; the upper part of the tail is darker, the central rectrices dark brown; the breast is less red, the throat white tinged with red; and both are conspicuously spotted with blackish; the flanks and under tail-coverts are white, marked with pale rufous; but the under surface of the tail is rufous as in the male.

Young (Ussuri river, 48° N. lat.). Upper parts generally more olivaceous brown than in the adult, the rump like the back, not tinged with rufous, the upper surface of the tail when closed is dark brown, only showing the rufous at the base of the outer rectrices; but the under surface of the tail is nearly as rufous as in the adult; streak over the eye slightly developed, buffy white in colour; throat white on the sides, tolerably profusely spotted with blackish brown; rest of the underparts white, the flanks slightly marked with pale rusty red, this colour showing still less on the breast.

Obs. The series of specimens before me exhibits considerable variation, especially in the immature birds. One in particular I may mention as having the throat and breast spotted almost like a Song-Thrush; but these parts are also tinged with rusty red, and in no other part of its plumage does it differ from typical *Turdus naumanni*. Another has the upper part of the breast as in immature *Turdus dubius*; but the lower flanks are marked with rufous as in *Turdus naumanni*; the upper surface of the tail and of the wings are as in immature *Turdus dubius*; but the under surface of the tail is rufous, though less so than in any specimen of *Turdus naumanni* I possess. Mr. Swinhoe, from whom I received this bird, marks it as being a hybrid between *Turdus naumanni* and *Turdus dubius*, which it very probably may be. In very old birds the red coloration becomes deeper in tinge; and in one from Ningpo this colour is deep chestnut-red. So far as I can judge from the specimens I have examined, the feathers on the breast and flanks are paler in the winter, and bordered with white, which to some extent hides the rufous coloration.

THIS richly coloured Thrush inhabits Northern and Central Asia, ranging as far east as Japan, and is only known in Europe as a rare straggler. J. A. Naumann appears to be the first who added this species to the European list. One was brought to him in November 1804 by a game-keeper, who had caught it in a wood not far from Naumann's own house. J. F. Naumann (Vög. Deutschl. ii. p. 293) states that a pair were caught in Silesia and several near Vienna. In the Appendix to Naumann's work it is stated that "it has occurred in the Carpathians, and has been often brought to the Pesth and Vienna markets for sale. In Dalmatia, Southern Italy, and Sardinia it has likewise been obtained, . . . and has been recorded from Galicia, Silesia, Bohemia, Moravia, and Austria." It appears to have occurred more frequently than *Turdus dubius*; for Dr. Blasius informed Dr. Sclater (Ibis, 1862, p. 320) that he received for comparison fourteen examples of various ages, and in different plumage, from Museums in Germany and Hungary, and that the bird often occurs in the Carpathians, and is not unfrequently brought into the markets as "game" in Pesth and Vienna. M. Dubois states that he received one in the flesh at Brussels, which, he adds, is the only instance of its occurrence there; but it certainly has been obtained in the south of France. Messrs. Jaubert and Barthélemy-Lapommeraye figure two, one adult and the other young, the first of which, they state, was killed in December 1856, in the

commune of Allauche, and the second was obtained by M. Bonifay in September 1845, and is now in the Marseilles Museum. Judging from the plate, I should have referred the immature specimen to *Turdus dubius*; but the description given of it shows that it must be *Turdus naumanni*; and the adult bird is certainly referable to this species. Salvadori says that the specimen indicated by De Negri in the 'Birds of Sardinia,' under the name of *Turdus naumanni*, has since proved to be *Turdus dubius*, and not the present species.

In Northern and Central Siberia this Thrush appears to be common, though it has been sadly confused with its allies by Von Middendorff and Dr. G. Radde; but Dr. von Schrenck has evidently recognized the birds obtained by him and determined them correctly. The present species is called by Von Middendorff *T. ruficollis*; but his description and remarks respecting Naumann's plates clearly show that the bird referred to by him under that name is true *Turdus naumanni*. He states (*l. c.*) that he first observed it about the middle of April, in the lower portions of the mountains near Amginskaja Slobodá, in flocks with *Turdus dubius*. Towards the end of April, when he had penetrated deeper into the Stanowoi Mountains eastwards, to about 60° N. lat., large flocks were seen on passage, flying from tree to tree, uttering their loud calls. They were then in full moult. After these flocks had passed, he observed early in May, on the lower portions of the western slope of the Stanowoi Mountains, a few Naumann's Thrushes, which were evidently nesting; but *Turdus dubius* had disappeared altogether. As he reached the highest portion of the mountains no more Thrushes were seen, nor were any observed on the eastern slope or near Udskoj-Ostrog; but he saw on the south coast of the Sea of Ochotsk some Thrushes on passage, but too far distant to distinguish the species. Although both species were seen in flocks together, yet it was easy, he says, to distinguish them by their habits; for whereas *Turdus dubius* was very wild and noisy, flying from tree to tree, and perching on the extreme tops or outer dry branches, reminding one much of *Turdus pilaris*, *Turdus naumanni* generally took refuge in the denser foliage of small conifer trees, and the male, less shy than *Turdus dubius*, might frequently be heard pouring forth its pleasant notes (which reminded him of those of the Song-Thrush) whilst perched on the top of a larch. The Jakuts call the present species the Pine-Thrush, and *Turdus dubius* the Larch-Thrush.

Von Schrenck obtained a single specimen of this Thrush through Herr Maack from the Ingoda valley, in Transbaikalia, where Herr Maack shot it on the 17th April (O. S.). Dr. Radde confuses this species and *Turdus dubius* under the name of *Turdus fuscatus*; but his *Turdus ruficollis*, as is easily seen by an examination of his plate (viii.), is certainly nothing but *Turdus naumanni* in fully adult dress. The first of these birds, he says, he met with at the Tarei-nor on the 13th April (O. S.), 1856. In 1858 he saw three individuals in the Bureja Mountains on the 24th March; on the following day several large flocks were observed; and on the 27th it was the commonest of the Thrushes found there then. In these mountains in 1857 the present species was tolerably numerous on passage on the 4th and 5th September, very common from the 7th to the 10th, and after that rarer, only small flocks being seen on the 23rd, and stragglers on the 26th. In the following year the main body passed on the 17th September. In the Bureja Mountains these Thrushes passed every morning from 8 to 10 o'clock, and were especially numerous during misty weather. These birds avoided the inner parts of the woods, generally keeping near the Amoor river, frequently resting on the high ash trees, and usually travelled at

an altitude of from 50 to 60 feet in irregular flocks, not unfrequently accompanied by Greater Spotted Woodpeckers. Mr. L. Taczanowski says (J. f. O. 1872, p. 437) that it appears in Dauria in the spring and autumn with *Turdus dubius*, and that, from what the travellers on the Lena to Jakutsk say, it must breed in the valleys of the Lena. Colonel Prjevalsky writes (Orn. Misc. vi. p. 195), "Strange to say, in Mongolia (at least as far as Urgey) there is not a single species of Thrush breeding, although some localities seem to be very suitable for that purpose, as for instance the wooded mountain-chains of Muni-ul and Alashan. But even during migration only very limited numbers visit Mongolia; and then they fly, avoiding the deserts, only along its eastern more fertile boundary. *Turdus naumanni*, which is so very common in China, was met with by us once, in a flock of several specimens, at the city of Dolan-nor in the Hoang-ho valley, and on another occasion at Koko-nor. In the Ussuri country it is very abundant during migration, but does not breed there, as we have never seen it in summer. At Lake Hanka this Thrush arrives about the middle of March, and proceeds on its migration northwards in the month of April; and in May none are to be seen. In autumn they migrate in October; and on the coasts of the Japanese sea I noticed single birds throughout November. During migration it always kept in small flocks of ten to thirty individuals." In China, according to Mr. Swinhoe, it is found from Shanghai to Peking, and westwards to Szechuen; and, judging from the number of specimens obtained by him, it is common there. It is also stated to occur abundantly in Japan; but in the collection from Yedo were none of this species, though *Turdus dubius* was abundantly represented.

I find nothing on record respecting the habits of this species, beyond the few details given above. It appears to be less demonstrative and noisy than the Dusky Thrush; but Mr. Swinhoe informs me that its affinities are certainly with the Fieldfare. Its nest and eggs are as yet unknown; at least I can find no description of them anywhere on record, and have never seen them in any collection.

The specimens figured are the adult and young examples above described, both of which are in my own possession.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a, b, c, ♂ ♂ ♀. Shanghai, March 1873. *d, ♂ ♀.* Ningpo, China, March 1872. *e, ♀.* Shanghai, November 1868. *f.* Formosa, February 1862 (*R. Swinhoe*). *g, ♀.* Ussuri river, 48° N. lat., May 12th, 1873 (*L. Taczanowski*). *h, ♂ juv.* Moupin, Thibet, November 6th, 1869 (*Père David*).

E Mus. Howard Saunders.

a, ♂. Ningpo, January 25th. *b, ♀.* Ningpo, March 1872 (*R. Swinhoe*).



DUSKY THRUSH

TURDUS DUBIUS.

(DUSKY THRUSH.)

Turdus dubius, Bechst. Gemeinn. Naturg. Deutschl. iv. p. 240, pl. v. *b* (1795).*Turdus fuscatus*, Pall. Zoogr. Rosso-As. i. p. 451 (1811).*Turdus eunomus*, Temm. Pl. Col. 514 (1831).*Turdus naumannii*, Temm. Man. d'Orn. ed. 2, iv. p. 604 (1840, nec i. p. 170).*Turdus fuscatus*, C. L. Brehm, Vogelfang, p. 161 (1855).*Cychloselys dubius* (Bechst.), Bonap. Cat. Parzud. p. 5 (1856).*Cychloselys fuscatus* (Pall.), Bp. ut suprâ (1856).*Planesticus fuscatus* (Pall.), Blyth, Ibis, 1866, p. 376.*Drost-chnosoboy*, Russian.*Figuræ notabiles.*

Gould, B. of Eur. pl. 79; id. B. of Asia, pt. iv.; Temm. *l. c.*; Pallas, *l. c.*; Naumann, Vög. Deutschl. pl. 359; Fritsch, Vög. Eur. taf. 20. fig. 10; Bree, B. of Eur. 2nd ed. ii. pl. to p. 40.

♂ *ad.* pileo et nuchâ nigricantibus, pilei plumis inconspicuè cinereo-cervino marginatis: nuchâ, dorso et tectricibus alarum minoribus latiùs griseo fulvido marginatis, uropygii plumis et supracaudalibus ferrugineo marginatis: remigibus nigro-fuscis, primariis vix cervino, et secundariis conspicuè ferrugineo marginatis: striâ superciliari albidâ fere ad nucham productâ: capitis lateribus nigricantibus, cervino notatis: gulâ cervino-albidâ, lateraliter nigro notatâ: gutture, pectore et hypochondriis nigris, his conspicuè et illo vix albo marginatis: abdomine albo: subcaudalibus fulvidis et fuscis, conspicuè albo marginatis: caudâ suprâ et subtùs nigricante: alis subtùs sicut in *Turdo naumanni* coloratis: rostro nigricante, ad basin flavido: pedibus pallidè brunneis: iride fuscâ.

♀ *ad.* mari similis sed coloribus sordidioribus.

Juv. corpore suprâ pallidiore et brunnescentiore quam in adulto: remigibus secundariis pallidè rufescente cinereo marginatis: caudâ suprâ et subtùs nigricante: corpore subtùs albido: gulâ et gutture lateraliter fusco guttatis, et pectore conspicuè eodem colore notato et vix cervino lavato: hypochondriis fusco notatis.

Adult Male (Yedo, Japan). Crown and nape blackish, the feathers narrowly margined with greyish buff; nape, back, and lesser wing-coverts more broadly margined with warm greyish brown, giving the upper parts a mottled appearance; rump and upper tail-coverts margined with deep fox-red; quills blackish brown, the primaries narrowly edged with warm buff, the secondaries and larger wing-coverts broadly margined with bright foxy red; tail blackish; sides of the head blackish, slightly marked with buff, a broad whitish stripe from the centre of the eye above, carried far behind; throat buffy white, on the sides spotted with black; lower throat, breast, and flanks black, the feathers on the former narrowly edged with white, and on the last broadly margined with that colour; abdomen white; under tail-

coverts brown, tinged with dull reddish brown, and broadly margined with white; under surface of the tail blackish; under surface of the wing as in *Turdus naumanni*; bill blackish, but yellow at the base; legs light brown; iris dark brown. Total length about 9 inches, culmen 0·82, wing 5·15, tail 3·78, tarsus 1·35.

Adult Female. Resembles the male; but is duller and paler in coloration of plumage.

Young (Lake Baikal, 19th May). Upper parts paler and browner than in the adult, the edgings to the secondaries paler, and greyish rufous; upper surface of the tail dark brown; underparts white, the sides of the throat, the breast, and the flanks (these last more sparingly) spotted with bold blackish markings; breast slightly tinged with warm buff; under surface of the tail blackish brown without any trace of rufous.

From *Turdus naumanni* the present species in immature dress is most easily distinguishable by having the eye-streak whiter, by the absence of rufous on the underparts, and more especially in having the under surface of the tail blackish brown instead of rufous.

LIKE *Turdus naumanni* the present species is a rare straggler to Europe from Asia, and has been far less frequently met with than that bird. First recorded by Bechstein in 1795, it has since then been to no small extent confused with Naumann's Thrush. Naumann himself states most positively that he fully convinced himself that the bird obtained by Bechstein was quite different from *Turdus naumanni*; and after a careful perusal of Bechstein's very accurate description, with a series of both species before me, I have no doubt whatever that his specimen was an immature Dusky Thrush; and I may point out that he says that the tail was blackish brown, thus giving the best characteristic of this species in immature dress.

In the account of the present species in the Appendix to Naumann's 'Naturg. Vög. Deutschl.' no distinct record of its occurrence in Germany is given, but it is said to have been obtained there more than once. Baron de Sélys Longchamps possesses a specimen obtained in Belgium, first recorded as *Turdus naumanni*; but this mistake in identification was rectified by M. Dubois (J. f. O. 1860, p. 227). It does not appear to have been obtained in France; but Count Salvadori cites the following instances of its occurrence in Italy, viz.:—one killed near Turin in the autumn of 1829, now in the Museum of that city; one obtained in the Genoa market in the winter of 1862; one in the collection of Count Camozzi, of Bergamo, obtained near Brescia; and a fourth, procured in the same district in November 1844, this last being an adult bird. I may add that Lord Lilford has examined and verified the specimen in the Museum at Genoa. It has probably occurred more frequently in Eastern Europe; but information on this head is wanting.

Throughout Northern Asia it appears to be generally distributed, migrating southward during the winter. Von Middendorff says that not only did he meet with it in the Stanowoi Mountains, but shot specimens on the Jenisei, above 59° N. lat., during the coldest part of the winter. On the 4th February he met with several flocks of from thirty to forty individuals at the Kordinskoje settlement, south of Jeniseisk; and he shot several on the 9th of February at the Sawina station, about 130 versts below Jeniseisk, on the river, the birds having during the severe cold taken refuge amongst the houses. Von Schrenck states that the present is the commonest species in the Amoor, where large flocks occur on the autumn passage. The first

were observed by him on the 31st August (O. S.) at the village of Belgu, near the mouth of the Gorin; and at the Nikolaieffsk post he saw it in 1854 on the 19th September, and from then to the 14th October, during which time considerable flocks were seen amongst the larch trees on the shores of the Amoor and its small tributaries the Kamr, the Litsch, and the Patchä, and were very noisy. Toward the end of the time he only observed single birds; and the last was observed on the 14th October. Mr. Maximowicz shot one at the Mariinskischen post on the 13th October; and Mr. Maack obtained it in the Bureja Mountains on the 13th September. As regards the information given by Dr. Radde, it is rather difficult to decide how far it can be utilized; for he has confused the different species of Thrushes most completely, as may easily be ascertained by comparing his plates and descriptions with specimens of the birds. Thus, under *Turdus fuscatus* he refers both to *Turdus naumanni* and the present species, and his *Turdus ruficollis* is nothing but the true *Turdus naumanni*. He says that "*Turdus fuscatus*" breeds at the head-waters of the Irkut, on the borders of the tree-growth, near the frontier posts of Turansk and Chaginsk, where he met with young birds barely fledged on the 2nd July, 1859; but it is uncertain whether this refers to the present species (*Turdus dubius*) or to *Turdus naumanni*. According to Mr. Taczanowski (J. f. O. 1872, p. 437) it is a common bird on passage in Dauria, arriving with *Turdus ruficollis* and *Turdus naumanni*. The first arrive in the spring on the 12th or 13th May; and in the autumn they remain to the 12th October. This species, he adds, breeds on the Angara, in the vicinity of Ussola. He also says (J. f. O. 1875, p. 246) that he received two adult specimens from the mouth of the Ussuri. Père David speaks of it as being abundant on passage in Mongolia; but Colonel Prjevalsky says (Orn. Misc. pt. vi. p. 196) that he only once met with a flock of this species, in the Shura-had Mountains, in South-eastern Mongolia, during migration. At Lake Hanka they migrate during April and the beginning of May, usually in company with *Turdus naumanni*, and, like that bird, do not breed there, but go further north for that purpose. In China the present species appears to be tolerably common on passage; Mr. Swinhoe informs me that it breeds there; and he has given me an egg which, he assures me, is undoubtedly authentic. Captain Blakiston obtained it at Hakodadi, in Japan, late in October, and says (Ibis, 1862, p. 319) that he "observed it in considerable numbers in the woods around Volcano Lake on the 20th of that month, when they seemed to have but just arrived from the north. Their habits appeared exactly like those of the Missel-Thrush of Europe; and the note of recognition was a similar kind of squeak." I may also add that in a collection I have lately received from Yedo there is a very fine series of this species in full breeding-plumage.

The Dusky Thrush is also stated by Dr. Jerdon (B. of India, i. p. 530) to be a very rare winter visitant to the N.W. Himalayas.

From what I can gather respecting the habits of this bird, it appears to resemble our European Fieldfare or the Misseltoe-Thrush in general habits; and its note is said to be loud and harsh. I have no details respecting its nidification; but the egg received from Mr. Swinhoe closely resembles some of those of the Misseltoe-Thrush in my collection, but is rather smaller. In 1871 (see P. Z. S. 1871, p. 104) I exhibited at a meeting of the Zoological Society some eggs sent to M. Verreaux by Dr. Dybowski as those of the present species; but subsequently I

was informed by M. Verreaux that he had received the birds from Dr. Dybowski, and that they proved to be the Pallid Thrush, though labelled in error by Dr. Dybowski as being the present species.

The specimens figured are the adult and young birds above described, both of which are in my collection.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a, ♀. Jakutsk (*Sabanäeff*). *b*, *c*, ♂ *juv.* Kultuk, near Lake Baikal, May 19th, 1870 (*Dybowski*). *d*, ♂. Moupin, Thibet, November 3rd, 1869 (*Père David*). *e*, ♀. Moupin, November 6th, 1869 (*David*). *f*, ♀. Shanghai, China, November 1865 (*R. Swinhoe*). *g*, *h*. N. Formosa, March 1862 (*R. S.*). *i*, *juv.* Ussuri, October 12th (*Dybowski*). *l*, *m*, *n*, *o*, *p*, *ad.* Yedo, Japan, 1875 (*C. M'Vean*). *q*, ♂, *r*, ♂ *juv.* Yokohama, Japan, February 18th and 21st, 1870 (*Captain Conrad*).

E Mus. Howard Saunders.

a, ♂. Shanghai, March 1873 (*R. Swinhoe*).



M & N Tanhart vep

REDTHROATED THRUSH
TURDUS RUFICOLLIS

TURDUS RUFICOLLIS.

(RED-THROATED THRUSH.)

Turdus ruficollis, Pall. Reise Russ. Reichs, iii. App. p. 694. no. 9 (1776).*Turdus erythrurus*, Hodgs. in Gray's Zool. Misc. p. 83 (1844).*Planesticus ruficollis* (Pall.), Bp. Cat. Parz. p. 5 (1856).*Drost crasnosoboy*, Russian.*Figuræ notabiles.*

Pall. Zoogr. Rosso-As. i. pl. 23; Naum. Vög. Deutschl. taf. 360.

♂ *ad.* pileo, nuchâ et corpore suprâ olivaceo-fuscis vix griseo tinctis: remigibus fuscis, extûs angustè rufescenti-cervino marginatis: rectricibus centralibus, et reliquis extûs, fuscis, his in pogonio interno et ad basin ferrugineis: striâ superciliari, regione suboculari, mento et gutture toto ferrugineis: corpore reliquo subtûs albo, hypochondriis vix griseo lavatis: subalaribus rufescenti-aurantiacis: rostro fusco-corneo, ad basin pallidiore: pedibus pallidè brunneis: iride fuscâ.

♂ *juv.* adulto similis, sed suprâ magis olivaceo, nec gutture ferrugineo, sed gulâ rufescenti-cervino conspicuè nigro notato et gutture sordidè ferrugineo et albo-cervino variegato.

Adult Male (Moupin, 10th November). Crown, nape, and entire upper parts olivaceous wood-brown with a faint greyish tinge; quills dark brown, externally narrowly edged with warm buff; central rectrices and the upper surface of the closed tail dull dark brown; but all the outer rectrices have the inner webs ferruginous, so that the under surface of the tail is foxy red; a streak over the eye, space below the eye, chin, and entire throat to the upper breast rich fox-red, some of the feathers having narrow whitish margins; rest of the underparts white, the flanks washed with greyish; under wing-coverts rufous orange; beak dark horn-brown, lighter at the base; legs light brown; iris dark brown. Total length about 10 inches, culmen 0·8, wing 5·3, tail 4·1, tarsus 1·35.

Young Male (Lake Baikal, 2nd of April). Resembles the male above described, but has the upper parts more olivaceous, and the red throat is wanting; the superciliary streak is warm buff, the upper throat is rufous buff boldly marked with black; and the lower throat and upper part of the breast are rufous buff, the bases of the feathers being rufous and the margins buffy white, these latter almost concealing the rufous bases; rest of the underparts as in the adult; under wing-coverts rusty orange, the primaries without any rufous margin to the inner web; bill with more yellow at the base than in the adult.

Obs. Unfortunately I have been unable to collect a series of specimens of the present species for examination; but Mr. L. Taczanowski, referring to the specimens sent to him by Dr. Dybowski, says (J. f. O. 1872, p. 438):—"This species shows great and numerous variations in coloration, which do not appear to depend either on age or season, as the most different varieties are found at the same time. The differences are chiefly on the breast, which in some males is uniform rusty yellowish, entirely unspotted or unmarked. In others, again, there are on each side of the throat distinct stripes, composed of small

spots, whilst some have the throat more or less varied owing to the feathers having pale rufous edges ; and in some these markings are distributed over the entire throat or the whole breast-patch, and they are in some more and in others less apparent. Some have the rust-yellow feathers edged with white, which gives a scaly appearance to the breast ; and in some these margins nearly hide the rust-red ground-colour. In some individuals the rusty red ground-colour of the breast-patch is paler than in others, and the superciliary stripe varies likewise : some have the breast-patch clear chocolate-colour ; and others, again, have brown clouded spots on a paler or darker ground, these spots being more or less confluent, and darkening the ground-colour more or less. Some males have the anterior part of the body more or less as in the female—that is, marked with dark colour on various shades of white : these are probably young males.”

Amongst all the various forms the most interesting perhaps is a male with the anterior portion of the body as in *Turdus fuscatus* (*T. dubius*). It has a light-yellowish throat, a broad bow-shaped band on the breast ; but the entire mantle, flanks, and tail are coloured as usual. The females also differ somewhat, these differences consisting of more or less markings, and in the ground-colour and the coloration of the spots ; but these varieties cannot be grouped as in the males. In the fresh-moulted autumn plumage the mantle has a more or less vivid tinge of olivaceous ; and the younger birds are more olivaceous than the older ones, this coloration being strongest in the birds of the year in their second plumage : these birds have the fore part of the neck and breast closely marked with blackish olivaceous spots, the flanks being similarly marked with paler spots.

A young bird in its first plumage, shot on the Chamardaban Mountains on the 15th July 1870, resembles a young Fieldfare (*Turdus pilaris*), but has the tail rusty yellow, except the two central rectrices, which are entirely olive-brown, and in the others the tip of the outer web and the tip of the feather are brown ; the ground-colour of the back is olive-grey without any rusty tinge, and, as in the young of *Turdus pilaris*, striated with whitish ; but the stripes are shorter, broader, and more pencilled, and there are similar markings on the wing-coverts ; the underparts of the body are as in the young Fieldfare.

Dr. Dybowski considers the variety with the dark clouded breast-patch to be a distinct form or species, and calls it *Turdus hyemalis*. He says:—“ It arrives here in the winter, and remains at that season near the brooks which have not frozen, or near the springs, where it finds an abundance of the larvæ of Diptera and Neuroptera. A few flocks frequent the treeless slopes on the south side of the mountains (there called ‘ soluopicki ’), and feed on grass-seeds, berries (of the hawthorn), and grubs. They leave us about the middle of April.” On the other hand, the varieties which differ more from the typical form, having the upper parts dark brown, the tail almost blackish, the lower throat, fore part of the neck, and superciliary stripe dark, and also the above-referred-to variety having a band as in *Turdus dubius*, are considered both by Dr. Dybowski and Dr. Cabanis to be hybrids.

Thus, one of the rarest of the Asiatic Thrushes, has been met with in Europe only as a very rare straggler. Mr. Gätke obtained an immature bird in Heligoland late in November 1843 ; and this specimen is still in his collection. Naumann records (Naturg. Vög. Deutschl. xiii. p. 325) a single instance of its occurrence in Germany, viz. of a young bird of the year which was obtained about the middle of October 1836, near Radeberg, not far from Dresden, and which is, he says, in the collection of Lieut.-Colonel Raabe. According to Dr. Altum (J. f. O. 1867, p. 109) one was purchased by him in the flesh at the Münster market on the 10th November 1866, since when I find no record of its occurrence in Europe. In Asia the present species is tolerably widely distributed, occurring in various parts of Siberia, and as far south as India. Dr. Finsch shot a specimen on the Ob river, near Berezoff ; and it has been observed in various parts of Siberia by different explorers. Dr. Severtzoff says that he found it rare on passage and

in winter in Turkestan; and Dr. Jerdon writes (B. of India, i. p. 528), "It has been found in various parts of the Himalayas, Nepal, and Bootan; but I did not procure it at Darjeeling, and it is probably found more in the interior of the hills." It appears that neither Dr. Radde nor Von Middendorff met with the present species, but mistook adult *Turdus naumanni* for it; but it has been obtained in Dauria by Dr. Dybowski, who writes (J. f. O. 1872, p. 437) as follows:—"In the vicinity of Kultuk this Thrush is only found on passage. In the spring it is common, arriving about the middle of May in flocks consisting of from ten to twenty or more individuals. They remain a short time searching after food on the ground, and then pass on. The passage continues for six to ten days; and as it consorts with other species, they keep up an unusual noise in the birch-groves in the valleys. When disturbed they will fly up and sit for some time in the trees, and then fly off in a northerly direction, uttering their alarm-note. In the summer we observed stragglers in the Tunkinsk Mountains, at an altitude of 3000 feet above the level of Lake Baikal; and in the autumn we met with small flocks on the mountain-slopes near the Changinsk post, 4000 feet above the lake, where they were feeding on grasshoppers. In the Chamardaban Mountains the young birds were seen with their parents on the skirts of the woods about the end of July. On the autumn passage they remained to about the end of September." Colonel Prjevalsky, who met with it in Northern Mongolia, says (Orn. Misc. ii. p. 197):—"With the exception of Halka and Northern Tibet, this bird was observed by us wherever we went during its migration, and appears to be the most numerous migrant of all the Thrushes. At Tsaidam we observed the first birds on the 14th of February; but in Kan-su and Muni-ul the principal migration took place in the middle of April. In autumn it was rather common in the Ala-shan Mountains; and at the same time we observed them in Kan-su, but not so numerous as in spring; and on the 5th of November we saw the last few specimens south of Koko-nor. I have in my collection about ten specimens of *T. ruficollis*. They all differ from *T. naumanni* by their grey flanks and the sharply marked red colour of the throat and breast, which (according to age) varies from light brick-red to chocolate-colour. We did not notice this bird in the Ussuri country." Mr. Swinhoe, who met with it near Pekin, in North China, says (Ibis, 1861, p. 332) that it "resembles somewhat *T. naumanni*; but a difference is at once seen in the brownish-red side-feathers of the tail, which are conspicuously displayed when the bird flies. A few arrived about Pekin in October, and frequented the leafless groves, where they would perch on the topmost boughs of the twigs three or four at a time. The note was a kind of chuckling chirp, and differed much from the ordinary sibilant 'sit' uttered by all the other species found in China. The affinities of this Thrush are certainly with the Fieldfare."

I find no record of the breeding of this Thrush, nor indeed any details respecting its habits beyond those given above; and its nest and eggs are, as yet, unknown.

The specimens figured are the two birds above described.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a, ♂ *ad.* Moupin, Thibet, November 10th, 1869 (*Père David*). *b*, ♂ *juv.* Kultuk, Lake Baikal, April 2nd, 1870 (*Dr. Dybowski*).



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DUSKY THRUSH
TURDUS OBSCURUS

TURDUS OBSCURUS.

(DUSKY THRUSH.)

- Dark Thrush*, Lath. Synopsis, ii. p. 31. no. 24 (1783).
Turdus obscurus, Gmel. Syst. Nat. i. p. 816 (1788, ex Lath.).
Tardus pallens, Pall. Zoogr. Rosso-As. i. p. 457 (1811).
Turdus seiffertitzii, C. L. Brehm, Lehrb. eur. Vög. ii. p. 972 (1824).
Turdus rufulus, Drapiez, Dict. Class. d'Hist. Nat. x. p. 443 (1826).
Turdus vernerii, Gén  , Mem. Ac. R. Tor. xxxvii. p. 296, pl. 2 (1834).
Turdus pallidus, Temm. Man. d'Orn. iii. p. 97 (1835).
Turdus modestus, Eyton, Proc. Zool. Soc. 1839, p. 103.
Turdus javanicus?, Horsf. apud Blyth, Cat. Mus. As. Soc. p. 161. no. 942 (1849, nec Horsf.).
Turdus dubius, aliq. apud Bp. Consp. Gen. Av. i. p. 273 (1850, nec Bechst.).
Planesticus obscurus (Gm.), Bp. Cat. Parzud. p. 5 (1856).
Turdus davidianus, Milne-Edw. Nouv. Arch. i. Bull. p. 26 (1865).
Geocichla obscura (Gm.), Jerdon, Ibis, 1872, p. 136.

Merle p  le, French; *blasse Drossel*, German; *Vale Lijster*, Dutch.

Figur   notabiles.

Fritsch, V  g. Eur. taf. 18. fig. 11; Naumann, V  g. Deutschl. taf. 357; Schlegel, Vog. Nederl. pl. 110; Temm. & Schl. Fauna Japon. pl. 27.

♂ *ad.* pileo et nuch   saturat   schistaceo-fuscis : dorso, scapularibus, tectricibus alarum et uropygio olivaceo-fuscis : caud   saturat   fusc  , rectrice extim   utrinque albido apicat   : remigibus fuscis, ext  s olivaceo marginatis : stri   superciliari, mento et vitt   magn   suboculari albis : capitis lateribus et collo reliquo schistaceis, loris et gutture supremo nigro-schistaceis : pectore et hypochondriis sordid   cervino-aurantiacis : corpore reliquo subt  s albo, subcaudalibus cinereo-fusco notatis : maxill   nigro-corne  , mandibul   flav  , nigro-corneo apicat   : iride fusc   : pedibus fusco incarnatis.

♀ *ad.* mari similis sed corpore supr   sordidiore, nec capite et collo schistaceo coloratis sed cinereo-fuscis, stri   superciliari cervino-albid  , mento et gul   cum colli lateribus albis, stri   magn   utrinque in gul   lateribus fusc   : corpore reliquo subt  s sicut in mare, sed vix sordidiore.

Juv. capite et corpore supr   olivaceis ochraceo guttatis, plumis saturatiore apicatis : subt  s albus : gutture et pectore profus   fusco guttatis : hypochondriis sordid   aurantiacis, stri   superciliari minus distinct   et flavido-alb  .

Adult Male (Yennesei, 7th June). Crown and nape dark slate-brown; back, wing-coverts, scapulars, and rump warm olivaceous brown; tail dark brown, the outer tail-feathers on each side with a narrow whitish tip; quills dark brown, with narrow olivaceous external margins; a distinct stripe over the eye, chin, and a wide patch under the eye joining the chin pure white; rest of the head and neck slate-

grey, the lores and the upper throat and ear-coverts darker; breast and flanks dull orange-buff; rest of the underparts white; the under tail-coverts blotched with greyish brown; upper mandible blackish horn; lower mandible yellow, tipped with horn; legs fleshy brown; iris dark brown. Total length about 7·5 inches, culmen 0·8, wing 4·92, tail 3·7, tarsus 1·25.

Adult Female (Yennesei, 8th June). Differs from the male in having the upper parts duller; the slaty tinge on the head and neck is wanting, these portions being brownish; eye-streak yellowish white; chin and throat dull white, this colour extending onto the sides of the neck; a broad streak of brown passes down each side of the throat from the gape; rest of the underparts as in the male.

Young (Yennesei, 6th August). Upper parts olivaceous, spotted with ochreous, the feathers dark-tipped; underparts white, the throat and breast profusely spotted with dark brown; flanks dull orange; the eye-streak rather less distinct than in the adult, and of a yellowish-white tinge.

In Asia this Thrush has a wide range: and its true habitat is there; for it is only known within the limits of the western Palæarctic Region as a rare and occasional straggler. I do not find it recorded from Scandinavia, and have no data from Mr. Sabanäeff respecting its occurrence in Russia. Nor is it included by Mr. Taczanowski in his notes on the ornithology of Poland; but it has certainly occurred several times in Germany: there is a specimen in the Berlin Museum labelled "Mark;" Borggreve states that Boeck records its occurrence once in Prussia, and Tobias twice in Oberlausitz; and Naumann states (Vög. Deutschl. xiii. p. 289) that he has examined half a dozen examples from North-east Germany. One described by him he obtained in the flesh from Kleinzerbst on the 26th September 1838; and several, he adds, have been obtained near Herzberg, in Saxony, in the Harz, and elsewhere, all in the early autumn, when the Song-Thrushes are on passage.

According to Professor Schlegel it has once occurred in Holland; and Baron Fallon says that it has been met with once or twice in Belgium; and one, in the collection of Baron De Selys Longchamps, was picked up in the Namur market amongst some common Thrushes by M. de Lafontaine. In France it is also only a rare straggler; but, according to Jaubert, it occurs not unfrequently in the vicinity of Marseilles in November, and is to be met with exposed for sale in the market almost every year. It does not appear to have occurred in Portugal or Spain; but Salvadori says that two have been killed in Italy—one in November 1827, and the other in November 1828, both near Turin. Dr. Anton Fritsch, in his Notes on the Ornithology of Bohemia (J. f. O. 1871, p. 193), says that it was twice obtained by Mr. Koch, on both occasions caught in snares, in the Emeth Revier, Hardenberg, Kreis Elbogen, one of these specimens being in the collection of Mr. Koch himself, and the other in that of Prince Radziwill, at Berlin; and there is an example in the Vienna Museum said to have been obtained in Austria.

In Asia the present species is tolerably widely distributed. It was only once met with in Turkestan, near the tower of Vernoe, by Dr. Severtzoff. Dr. Jerdon does not include it in his 'Birds of India,' but says (Ibis, 1872, p. 136) that Colonel Godwin-Austen procured one at Cherra-Poonjee in November. In Siberia, as below stated, it was found by Mr. Seebohm on the Yennesei; and he was fortunate enough to obtain both the eggs and young birds. Von Middendorff says that he obtained a pair near Udskoj-Ostrog which agree closely with Naumann's plate 357; and Dr. Radde obtained a series of twenty-eight examples in South-east Siberia.

He saw the first pairs on the 3rd May 1856, on the Tarei-nor, but did not observe them in the spring in the Bureja Mountains, though he heard the male in full song on the 18th May above the Schilkinski Savod, on the islands of the Schilka. In the autumn the first began to pass late in August, and the main body of migrants appeared early in September. Dr. Dybowski has sent many specimens from Lake Baikal; and Colonel Prjevalsky (B. of Mong. no. 109, in Rowl. Zool. Misc. part vi. p. 198) says that late in the spring he saw some on passage in S.E. Mongolia, Ordos, and Ala-shan; in 1871 he observed it in S.E. Mongolia on the 9th of May, in 1872 at Ala-shan on the 20th of May. In autumn he noticed it in the Hoang-ho valley toward the end of August, and at Ala-shan during the month of September. In spring, as well as in autumn, these birds were migrating only in small flocks of from three to ten individuals; and, owing to the scarcity of trees, they frequented the steppes and plains covered with "sacsaulnics." MM. David and Oustalet say that it is common on passage in China and Mongolia, and the latter received examples from Penang. According to Mr. Swinhoe it is found from Malacca to Peking, and westward to Szechuen and Formosa; and it also occurs in Japan, whence I possess a specimen obtained through Mr. Franks. Mr. A. O. Hume also records it (Stray Feathers, ii. p. 496) from the Andamans. It has been sent from Java and Malacca, and is recorded by Bonaparte as found in the Philippines; but its occurrence there, though in itself highly probable, appears, Lord Tweeddale remarks, to rest on no other ground than Bonaparte's statement. According to Messrs. Finsch and Hartlaub it has also been met with in the Pelew Islands.

Until quite lately but little was known about the habits and nidification of the present species. I am indebted to Mr. Seeböhm, who met with it on the Yenesei, for the following notes, viz.:—"The Dark Thrush arrived on the Arctic circle on the 7th of June, and frequented the oases of bare ground on the sunny slopes of the banks of the Koo-ray'-i-ka, where it fed upon the previous year's crowberries and cranberries which had been preserved through the winter by the frost. As soon as the snow in the forests was melted, these birds left our headquarters and retired inland to breed. I secured several examples on their first arrival, and afterwards frequently heard their song in the forests. This Thrush is a very poor songster, but he has a splendid voice. He seldom gets beyond two or three notes; but in clearness and richness of tone the few he utters are fully equal to those of the Blackbird. On the 27th of June, a day or two before we left the Koo-ray'-i-ka, as I was strolling through the forest, extremely annoyed at what I thought was the unreasonable delay of Captain Wiggins in starting for the tundra, I suddenly forgot all my troubles by seeing a Dark Thrush fly from her nest in a slender spruce-fir tree. I shot the bird, and was soon up the tree. The nest was placed about fifteen feet from the ground, upon a horizontal branch about six inches from the main stem. It was exactly like that of a Fieldfare, but was carefully lined with mud before the final lining of dry grass was placed in it. It contained five eggs resembling small but richly marked Blackbird's eggs.

"After we left the Arctic circle I saw no more of this species until the 3rd of August, on my return journey, when, in lat. 66°, near Sil-o-vah'noff, the village of the unfortunate Scopsi, I shot a young Dark Thrush in first plumage. On the 6th of August, in lat. 63°, I got amongst a brood of young Dark Thrushes which were uttering loud cries like *tick, tick*. This, I presume, is the Kestrel-like cry alluded to by Latham. I shot one bird from this brood, which will be

figured in Dresser's 'Birds of Europe.' It resembles very closely the young of the other Thrushes, being profusely spotted on the back and breast."

Dr. Dybowski, in his excellent notes on the nidification of various species of Arctic birds, communicated to Mr. Taczanowski, writes (J. f. O. 1872, p. 441) as follows:—"This Thrush breeds here (in Dauria), and is tolerably common, appearing in the spring about the 20th May. During the nesting-season it inhabits valleys overgrown with larch, fir, and the cembra pine. It nests on young free-growing fir or larch trees, the nest being placed in a fork or on the boughs near the main stem, at an altitude of about 3 to 5 metres. It is constructed of dried grasses and weeds, worked together with earth, and lined with fine grass and dry larch needles, and is neatly and firmly built. It measures 120 millims. outside diameter, and 100 millims. in height, the diameter of the cup being 90, and the depth 50 millims. Usually it is well fastened to the bough, and is not easy to detach, the more so as the trees on which it is built are usually slender and tall, and the branches thin. Early in June the female lays four or five, seldom six, eggs; and incubation commences at once. Whilst the female is sitting the male remains at some distance, and, in halting, uncertain, tones utters its by no means melodious song, which consists of a strophe continually repeated; and it sings more industriously in the morning and at sunset. The female sits close, but is difficult to shoot on the nest, as it is so hidden in the boughs, and when disturbed she slips off, and does not soon return. When the young are hatched the old birds attack any intruder. The eggs resemble those of the Blackbird and Fieldfare, and are subject to considerable variation, even in the same clutch. The ground-colour is pale blue, blue-greenish, or dirty blue with a yellowish tinge; and the markings consist of violet-brown shell-blotches and dark olive-brown or rusty red surface-spots. The eggs are either irregularly spotted sparingly or profusely, or also closely dotted with small spots; in shape they vary much, are short or long, stout or elongated, and more or less glossy, the pores of the shell being scarcely visible: the measurements are very variable—say 29 by 17·5 millimetres, 25 by 18·5, 23·5 by 17·5, 27 by 20, 25·5 by 19·5, 30·5 by 20, 28·5 by 18·5."

I received one of the clutches of the eggs of this species collected by Dr. Dybowski, through the late M. Verreaux, which closely resemble small, very richly coloured Blackbird's eggs, and do not vary much *inter se*.

The present species and *Turdus pallidus*, Gm. (better known, perhaps, under Temminck's name of *Turdus daulias*), have been so frequently confused that it is no easy matter to unravel the tangled synonymy. There is, however, no doubt that the present species should bear the name of *Turdus obscurus*. Gmelin founded his name on Latham's description (*l. c.*) of the Dark Thrush, which clearly refers to the present species; for he says that the "general colour of the plumage is brown, the breast inclined to black; over the eye is a streak of white; and the chin and vent are also white." On the other hand, there can be no doubt that Latham's Pale Thrush, on which Gmelin founded his *Turdus pallidus*, is the species usually known by the name of *Turdus daulias*, as his description gives the chief characteristics with great fidelity.

The specimens figured are the adult male and young bird above described.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a, ♂. Kultuk, May 24th, 1870 (*Dybowski*). *b*. Amoy, China, May 1866 (*R. Swinhoe*). *c*, ♀. Japan (*Franks*).
d, *e*, *f*. Malacca (*Franks*).

E Mus. H. Seebohm.

a, *b*, ♂. Yennesei, June 7th. *c*, ♀. Yennesei, June 8th. *d*, *e*, ♀. Yennesei, June 27th. *f*, *pull*. August 3rd.
g, *juv*. August 6th, 1877, Yennesei (*H. S.*). *h*, ♂ *jun*. Kulussutajeffsk, Siberia, May 20th, 1856 (*Dr. Radde*).
i, ♂. Jartchy, Mongolia, May 25th, 1866 (*David*). *k*, ♀. Shanghai, November 8th, 1873 (*R. Swinhoe*).



Hanhart imp

WHITE-THROAT
SPARROW

TURDUS VARIUS.

(WHITE'S THRUSH.)

- Turdus varius*, Pall. Zoogr. Rosso-As. i. p. 449 (1811).
Turdus aureus, Holandre, Annuaire de Verronais, 1825, p. 310.
Turdus squamatus, Boie, Isis, 1832, p. 252.
Turdus whitei, Eyton, Rarer Brit. Birds, p. 92 (1836).
Oreocincla varia (Pall.), Gould, Proc. Zool. Soc. 1837, p. 136.
Oreocincla whitei (Eyton), Gould, ut suprâ.
Oreocincla aurea (Hol.), Bp. Cat. Ucc. Eur. p. 34. no. 136 (1842).
Turdus lunulatus, Blas. List. B. of Eur. p. 9 (1862, nec Lath.).
Oreocincla hancii, Swinhoe, Ibis, 1863, p. 275.
Turdus dauma, V. Pelz. Verh. k.-k. zool.-bot. Gesellsch. Wien, 1871, p. 703 (nec Lath.).

Figuræ notabiles.

Gould, B. of Eur. pl. 81; id. B. of Great Britain, ii. pl. 39; Naumann, Vög. Deutschl. taf. 354.

Ad. pileo et corpore suprâ fuscis, plumis nigro apicatis et ochraceo-fusco subterminatis: alis extûs pallidè fuscis et intûs nigro-fuscis, saturatè fusco apicatis: tectricibus alarum minoribus nigricantibus pallidè flavido apicatis, tectricibus majoribus saturatè fuscis flavo-fusco apicatis: rectricibus 14, centralibus pallidè fuscis immaculatis, reliquis nigricantibus angustè pallido fusco-albido apicatis, duabus extimis conspicuè pallidiore terminatis et albido apicatis: mento et gulâ albis: capitis lateribus albidis nigro guttatis: pectore et hypochondriis albis flavo-fusco lavatis et nigro lunulatis: corpore reliquo subtûs albo: rostro fusco, ad basin sordidè flavido: pedibus sordidè flavido-incarnatis: iride fuscâ.

Adult Male (Lake Baikal). Crown and upper parts generally wood-brown, the feathers with a crescentic tip of black and a subterminal ochraceous brown band; quills pale brown on the outer and brownish black on the inner web with dark-brown tips and black shafts; lesser wing-coverts blackish tipped with pale yellowish, the larger coverts dark brown with light-yellowish-brown tips, forming two obliquely descending bars; feathers of the spurious wing light yellowish brown tipped with black, forming an ascending oblique bar; fourteen rectrices, the central four pale uniform brown, the next three on each side blackish brown with narrow light tips, the remaining two on each side broadly terminated with light brown and tipped with dull white; chin and throat white; sides of the head and neck spotted with black; underparts white, breast and flanks tinged with yellowish brown, the feathers with black crescentic tips; under tail-coverts white; anterior under wing-coverts white tipped with black, a white band crosses the under surface of the wing; bill dark brown, yellowish at the base; iris dark brown; legs pale brownish flesh-colour. Total length about 12 inches, culmen 1.0, wing 6.5, tail 4.75, tarsus 1.35, the second primary intermediate in length between the fourth and the fifth, the third longest, the fourth being but little shorter.

ALTHOUGH an inhabitant of Eastern Asia, this Thrush has frequently straggled to various parts of Europe, and as far west even as Great Britain, where it has been captured on at least nine

occasions. The first recorded British-killed specimen appears to be that shot by the late Lord Malmesbury at Heron Court, near Christchurch, on the 24th January 1828, and described as new by Mr. Eyton under the name of *Turdus whitei*. Since then the following occurrences are recorded, viz.:—one obtained by Mr. Spraine, at Bandon, county Cork, in December 1842 (Allman, Ann. & Mag. Nat. Hist. xi. p. 78); one at Welford, near Stratford-on-Avon, on the 26th January 1859 (Tomes, Ibis, 1859, p. 379); one at Ballymahon, county Longford, Ireland, in 1867 (Blake-Knox, Zool. s. s. p. 2060); one at Hestercombe, near Taunton, Somerset, early in January 1870 (Cecil Smith, Zool. s. s. p. 2018); one at Langsford, near the Mendip Hills, 6th January 1871 (Cecil Smith, Zool. s. s. p. 2607); one at Hickling, Norfolk, 10th October 1871 (Gunn, Zool. s. s. p. 2848); and one which, according to Mr. Hancock (B. of North. and Durh. p. 64), “was shot in Castle-Eden Dene, Durham, by Rowland Burdon, Esq., on the 17th of January 1872: it was only wounded, and was not captured until about a fortnight afterwards, and is now in the possession of that gentleman. A notice of this occurrence was sent to the ‘Field’ newspaper, February 1872, from which it appears that the tips of the primaries of one wing had been entirely cut off by the shot. Some of the feathers that had been shot away were kindly sent to me. It lived three weeks in captivity, and ate freely.” Besides those already mentioned, one was seen and clearly recognized at Danby, in Cleveland, in the spring of 1870, by Mr. Atkinson (Zool. s. s. p. 2142); but he did not obtain it. All the above instances of the capture of this Thrush in Great Britain have been cited by Professor Newton in the fourth edition of Yarrell’s ‘British Birds;’ but since then I received information in a letter from Mr. E. Hearle Rodd, dated 15th January 1874, of the capture of a male in Cornwall “a day or two previously;” and this occurrence was subsequently noticed by that gentleman, in October 1874 (Journ. Inst. Cornwall, No. xvi. p. 58).

On the continent of Europe more than twice as many instances are recorded from various localities. It has once been obtained in Sweden, a specimen now in the museum at Stockholm having been purchased amongst some game from Jemtland, in the market at Stockholm in January 1838. In Heligoland, Mr. Cordeaux writes (Ibis, 1875, p. 177), “it has occurred several times. Mr. Gätke has five in one case, magnificent examples, all of which came fresh into his hands. Others have been seen and not obtained. Some recent occurrences are:—October 4th 1864; April 23rd 1869, a male; October 1st 1869, seen but not obtained; October 16th 1869, a female; September 18th 1870, not obtained.” In the Museum at Lund there is a specimen of the Australian form, *Turdus lunulatus*, which was purchased by Baron Gyllenkrok of a dealer in Hamburg, and which was labelled as having been shot in Fyen; but there seems to be considerable doubt as to the correctness of this statement. According to Von Homeyer (Rhea, ii. p. 144) there is a specimen in the Königsberg Museum, which was obtained at Elbing, in Prussia; two, referred to by Mr. Gould in his ‘Birds of Europe,’ were procured near Hamburg prior to 1838; Mr. C. Sachse informs me that one was shot at Hardtburg, about eight German miles from Cologne, late in November 1874; and Mr. C. F. Dubois writes (J. f. O. 1856, pp. 238, 505) that an old male, snared in the forest of Dron-le-mont, near Grez-Doiceau, on the 17th October 1842, is now in the collection of Baron de Selys-Longchamps; a second, captured at Louvaine in October 1855, is in the possession of Mr. Bovie; and a third was obtained near Jemappes about the same time. One in the Metz Museum was taken in the woods of Rezonville

in September 1788. In France it has been obtained at least once; for there is, or was, a specimen in the Marseilles Museum, which was killed near there in October 1840. According to Count Salvadori (*Faun. d'Ital.* ii. p. 78) an adult bird, now in the collection of Count Turati, in Milan, was bought by De Negri in the Genoa market in 1863; a second, in the Museo civico di Roveretto, was captured near Borgo di Valsugana, in October 1854; a third was killed near Genoa on the 17th October 1870; and a fourth is in the Museo civico of that town. Dr. Althammer (*Rev. de Zool.* 1861, p. 553) records the occurrence of a female in the Tyrol in 1861; one is stated (*Isis*, 1845, p. 564) to have been purchased in the Vienna market; and Herr von Pelzeln states (*l. c.*) that there is one in the Vienna Museum, obtained at Aspang, which was bought of Parreyss.

In Asia this Thrush is chiefly met with in the far east. It does not appear to occur in India; and though found in Western Siberia, it is but rare there. Gmelin obtained it at Krasnojarsk, and Steller on the shores of Lake Baikal. In the latter locality, according to Dr. Dybowski (*J. f. O.* 1872, p. 436), "it is not uncommon, but very shy and difficult to shoot. It passes on migration, in company with other Thrushes, from the middle of May to the beginning of June. Its note differs from that of the common Thrush; and its call when on passage is a peculiar but melodious whistle. It does not occur in the autumn, but it probably breeds at no great distance, as it remains here for long when on passage." Dr. Radde obtained three examples, on the spring passage, at Kulussutajeffsk, on the Tarei Nor. Colonel Prjevalsky states (*Rowl. Orn. Misc.* ii. p. 200) that he found one dead on the Northern Ala-shan desert, where it doubtless perished from hunger, and he shot one late in April at Lake Hanka, in the Ussuri country. Père Armand David found it wintering in the mountains of Fokien, and adds (*Ois. de la Chine*, p. 158) that it is found regularly on passage at Peking, but always in small numbers.

Mr. Swinhoe records it from China generally and Formosa; and it has been obtained in Japan, where it is said to be frequently offered for sale in the Yokohama market in winter.

It ranges tolerably far south; for Mr. Gould has received one from Manilla, and I have examined one in the collection of the Marquis of Tweeddale from the same locality, and one from Tonghoo.

But little is known respecting the habits of this rare bird. Mr. Tomes, in an excellent article on this species (*Ibis*, 1859, p. 379), gives some details respecting the habits of one of these Thrushes, and the locality where it was killed in England, which I transcribe as follows:—"I may commence by stating that the village of Welford, five miles west of Stratford-on-Avon, where the specimen was obtained, is situated in a bend of the Avon, and that the soil is a rich alluvium. Its position is highly favourable for the growth of timber and fruit trees; and it is well shrouded in orchards and small enclosures, fringed with their hedge-rows and ivied elms, affording a favourite haunt for many of the smaller birds, with a good supply of cherries and other fruits in the summer months, and of berries through the autumn and winter seasons. From a cherry orchard, a few miles down stream, I obtained, a few years since, a specimen of the Rose-coloured Pastor; and Starlings and Thrushes abound. Of insect feeders there is an equally good supply; and I have had more than one opportunity of inspecting the nesting of the Lesser Spotted Woodpecker.

"In a small grass inclosure immediately adjoining the village, and thickly surrounded by elms, a friend of mine observed a bird rise from a dry leafy ditch, which at the first glance was mistaken for a Woodcock, but soon recognized as one of the Thrush kind. This happened on the 6th of January; and on hearing the account, I stimulated further research, but without effect until the 23rd of that month, when the bird was again flushed from the same inclosure, and, as before, from the bottom of a dry ditch amongst dead leaves. Again on the 26th it rose from the same ditch, and within a few yards of the same spot. On each occasion it was busied in turning over the dead leaves, from beneath which it appears to have taken its food. Although Blackbirds, Thrushes, and Missel-Thrushes were abundant, and seen at the same time feeding on the ivy and hawthorn berries, the present bird was always observed to resort only to the trees or hedges when disturbed, and then merely to a place of rest, remaining for some time perched in an upright position in one spot, without noticing the berries or the species feeding on them. Its flight when roused from its feeding was very undulating, like that of the Green Woodpecker, and low, often settling on the ground, and only making choice of a tree when it happened to pass under one, into which it rose almost vertically. As far as its habits could be ascertained from these short opportunities of observation, it would appear to be almost entirely a ground feeder. Mr. Blyth says of the allied Indian species, *Oreocincla dauma*, that it is generally met with amongst bamboos, in which situation the ground would very likely be the attraction, rather than the canes."

The breeding-habits of this Thrush are scarcely known; and, so far as I can ascertain, the only eggs that have hitherto come into any collection are those obtained by the late Mr. Swinhoe, who kindly presented me with one out of the clutch. This gentleman published the following notes (in Rowl. Zool. Misc. ii. p. 256) respecting these eggs, viz.:—"It was not until I got to Ningpo, in 1872, that I found that White's Thrush spent the summer in the wooded parts of the hills around that neighbourhood; and I thence conclude that it resides in similar hills in summer all down the coast of China, resorting to the plains and gardens in its winter migrations.

"In May 1872 I resided for a time at a large temple near Ningpo called 'Chin-hooze,' in the midst of woods situated on a hillside. Some boys pointed to a nest, hidden in the upper branches of a high pine tree, and asked if they should climb to it. Thinking it was a Blackbird's, I assented, and then wandered away. Soon after I met the boys, who carried in their hands the nest (to all appearance that of a Blackbird) with three eggs, which, though so like a Blackbird's, had the dots so minute that they struck me as being of an allied species, probably the *Oreocincla*. I went back to the tree; and on the bough where the nest had been were the parent birds in trouble at their loss. I saw them distinctly, and recognized them as being of this species.

"The nest was for all the world like that of the Chinese Blackbird—about the same size. It is about 4 inches deep, 7 inches in outer and $4\frac{1}{2}$ inches in inner diameter, and $3\frac{1}{4}$ inches in depth. The eggs are three in number, ovate, whitish, with minute reddish spots."

The egg in my collection, one of the above clutch, resembles those of *Turdus viscivorus*, but is rather paler, and the spots are much smaller and more numerous.

The present species, together with those Thrushes which have the underparts marked with crescentic bars, has been by many authors separated from the true Thrushes, under the generic name of *Oreocincla*; but I agree with Professor Newton that there seems to be no valid reason

for this separation. As the various species have been so continually confused, and especially as one finds so frequently one of the other species doing duty for *Turdus varius* in collections, I give the following table showing the differences by which they may be at once distinguished. This table is drawn up according to a plan arranged by Mr. Seebohm (who has worked out these Thrushes with me), which appears to me to be extremely simple and practical.

| | | |
|-----|---|----|
| | { Fourteen tail-feathers | 1 |
| | { Twelve tail-feathers | 2 |
| | { Second primary much longer than the fifth | 3 |
| 1. | { Second primary much shorter than the fifth | 4 |
| | { Basal portion of the inner web of quills white | 5 |
| 2. | { Basal portion of the inner web of quills buff | 6 |
| 3. | <i>Turdus varius</i> , Pall. (Zoogr. R.-A. i. p. 449, 1811), range as above. | |
| 4. | <i>Turdus horsfieldi</i> , Bp. (Rev. de Zool. 1857, p. 205). Java. | |
| | { Underparts entirely buff lunulated with black | 7 |
| 5. | { Underparts white lunulated with black, and washed with ochraceous on the breast | 8 |
| | { Upper parts olive lunulated with ochraceous and black | 9 |
| 6. | { Upper parts olive lunulated with black | 10 |
| 7. | <i>Turdus imbricatus</i> (Layard), Ann. & Mag. Nat. Hist. 1854, p. 212. Ceylon. | |
| 8. | <i>Turdus nilgiriensis</i> , Blyth (J. As. Soc. Beng. xvi. p. 136, 1847). Neilgherries. | |
| 9. | <i>Turdus dauma</i> , Lath. (Ind. Orn. i. p. 362, 1790). India. | |
| 10. | <i>Turdus lunulatus</i> , Lath. (Ind. Orn. Suppl. p. 42, 1801). Australia. | |

Besides these six species there is another, which has been described by Mr. Gould from North Australia as distinct, *Turdus iodurus* (Gould), Ann. & Mag. Nat. Hist. 1872, vol. ix. p. 401, and which may possibly be a valid species; but having only had an opportunity of examining one specimen, I cannot speak with certainty. It very closely resembles *Turdus nilgiriensis*, but has the second primary about .02 inch longer than the sixth, whereas in *Turdus nilgiriensis* it is only .01 inch longer, and the upper parts of *Turdus iodurus* are more ochraceous in general tinge of colour than is the case in *Turdus nilgiriensis*.

In a series of specimens we find also that it is by no means easy to draw a hard and fast line between *Turdus dauma* and *Turdus lunulatus*. In the latter species the upper parts are usually much darker and more olivaceous, the feathers seldom having the subterminal ochraceous bars so conspicuous in *Turdus dauma*, or else they are dull rufescent instead of ochraceous. The central rectrices in *Turdus dauma* are also much lighter, compared with the lateral ones, than is the case with *Turdus lunulatus*. In immature examples of this latter species, however, the upper parts are paler, and there are subterminal bands on the feathers of the crown; so that they approach dark-coloured specimens of *Turdus dauma* in appearance. *Turdus horsfieldi*, described by Bonaparte in May 1857, was simultaneously described by Sundevall (J. f. Orn. May 1857, p. 161) under the name of *Oreocincla malayana*; but as I well know from experience that the 'Journal für Ornithologie' is rarely issued until two or three months at least after the date on the title-page, I think that there is every reason to suppose that Bonaparte's name was first published; and I have adopted it accordingly.

In the above list I have only included those which have the upper parts varied, excluding

those with plain backs, as they cannot well be mistaken for White's Thrush. The species which approaches most nearly to *Turdus varius* is *Turdus dauma*; but this latter species may be distinguished, not only by having twelve rectrices, but by having the second quill intermediate in length between the fifth and the sixth, whereas in *Turdus varius* it is intermediate between the fourth and fifth.

I take this opportunity of acknowledging with thanks the assistance rendered by the Marquis of Tweeddale, who has kindly lent me his whole series of Thrushes allied to the present bird; and I have therefore been able to examine a considerable number of specimens (with those in the British Museum) of the different species included in the above list.

The bird described and figured is an adult male from Lake Baikal, in my own collection.

In the preparation of the above article I have examined the following specimens of *Turdus varius*:—

E Mus. H. E. Dresser.

a, ♂ *ad.* Lake Baikal, April 19th (*Dr. Dybowski*).

E Mus. Lord Tweeddale.

a. Manilla. *b*, ♂. Tonghoo, January 17th, 1876 (*R. G. Wardlaw Ramsay*). *c.* Camphor Hills, Formosa 1862 (*R. Swinhoe*).

E Mus. Brit. Reg.

a, *b*. Japan.

E Mus. H. Seebohm.

a. Amoy, March 1866. *b*, ♂. Amoy, March 7th, 1859 (*R. Swinhoe*).



BLACKTHROATED THRUSH
TURDUS ATROGULARIS

TURDUS ATRIGULARIS.

(BLACK-THROATED THRUSH.)

Turdus atrogularis, Temm. Man. d'Orn. i. p. 169 (1820).*Turdus bechsteinii*, J. F. Naumann, Vög. Deutschl. ii. p. 310 (1822).*Cichloides*, Kaup (*Turdus bechsteinii*, Naum.), Natürl. Syst. p. 153 (1829).*Sylvia atrogularis* (Temm.), Savi, Orn. Tosc. iii. p. 203 (1831).*Merula atrogularis* (Temm.), Bp. Comp. List, p. 17 (1838).*Turdus atrigularis* (Temm.), Keys. & Blas. Wirbelth. Eur. p. 51 (1840).*Merula leucogaster*, Blyth, J. As. Soc. Beng. xvi. p. 149 (1847).*Planesticus atrogularis* (Temm.), Bp. Cat. Parzud. p. 5 (1854).*Cichloides atrigularis* (Temm.), Tytler, Ibis, 1869, p. 124.*Merle à gorge noire*, French; *Tordo dal petto nero*, Italian; *schwarzkehlige Drossel*, German; *Sortstrubet Drossel*, Danish.*Figuræ notabiles.*

Werner, Atlas, *Insectivores*, pl. 16; Kjærbo. Orn. Dan. taf. 17; Fritsch, Vög. Eur. taf. 24. figs. 19, 20, 21; Naumann, Vög. Deutschl. taf. 69. fig. 1, fig. 2?, taf. 361. figs. 1, 2; Gould, B. of Eur. pl. 75; id. B. of G. Brit. ii. pl. 36.

♂ *ad.* corpore suprâ griseo-fusco vix olivaceo tincto, indistincte striato: pileo saturatiore: alis et caudâ saturatè fuscis angustè pallidiore marginatis: mento, gulâ et gutture nigris, plumis in gutture angustè pallidè fusco marginatis: corpore reliquo subtùs albo, hypochondriis pallidè griseo-fusco striatis et lavatis: subcaudalibus rufescente fusco striatis: subalaribus et axillaribus sordidè aurantiaco lavatis: rostro flavo ad basin, et versus apicem nigro: pedibus flavo-fuscis: iride fuscâ.

♀ *ad.* mari similis, sed corpore suprâ magis olivaceo, nec gulâ et gutture nigris, sed albis, conspicuè nigro striatis et notatis, subalaribus magis aurantiaco lavatis.

Adult Male (Chodjenty, 13th December). Upper parts greyish brown with an olivaceous tinge, the feathers with very faintly darker centres; crown darker, the centres of the feathers much darker; wings and tail dull brown with narrow lighter margins; entire chin and throat down to the breast deep black, some of the feathers with very narrow light margins, rest of the underparts white, the flanks washed and striped with greyish brown; under tail-coverts varied with streaks of reddish brown; under wing-coverts and axillaries tinged with dull reddish orange; bill yellow, blackish at the tip; legs light yellowish brown; iris dark brown. Total length about 9.5 inches, culmen 0.75, wing 5.45, tail 4.3, tarsus 2.3.

Adult Female (Simla). Upper parts as in the adult male, but rather more olivaceous in tinge; throat down to the breast white, closely striped and marked with black; under wing-coverts and axillaries brighter orange-red in tinge, and the under surface of the wing slightly washed with orange; rest of the underparts as in the male.

Young Male (Chimkent). Resembles the female, but has the throat more strongly marked with black.

LIKE the other species of Siberian Thrushes which have occurred in Europe, the Black-throated Thrush is but a rare straggler within the limits of the Western Palæarctic Region, except perhaps on its extreme eastern frontier; for it is said to be at times numerous in the Ural. It has once been met with as far west as Great Britain; for a young male, now in the collection of Mr. T. J. Monk, of Mountfield House, Lewes, was obtained near that town on the 23rd of December 1869. It is somewhat difficult to estimate the number of specimens which have been obtained in Europe; for it has been, like its allies which have straggled to us from Asia, not a little confused with them; and some of the records of its capture may possibly refer to one of the allied species.

It has not been met with in Norway or Sweden; but Professor Malmgren informs me that an old male was shot near Tavastehus, in Finland, lat. 61° N., in December 1871, and is now in the Helsingfors Museum. It is of not unfrequent occurrence in Russia, though only, it would seem, in the eastern portion. Mr. Sabanäeff says that he met with it in large numbers in the Pavdinskaya Dacha; and it is said to be found further south in the Kaslinsky Ural. Eversmann says that it straggles to the Orenburg Government from the southern Altai; and Hoffmann met with it between 62° and 65° N. lat. in the Ural.

It has occurred on several occasions in Germany; but by some authors the records of its occurrence are given in very general terms, and are therefore open to doubt. Borggreve, on the authority of Pastor Boeck, states that it has occurred near Danzig. Dr. Zander records two instances of its occurrence in Mecklenburg, where it is said to have occurred not unfrequently. Naumann says that it occurs, as a rare straggler, in Hungary, Austria, and Bohemia. Natterer obtained it several times amongst the Thrushes offered for sale in the Vienna market; and it is said to have been obtained in Silesia. Many years previously fourteen were seen in Thuringia, near Coburg, late in October, and two were caught and described by Bechstein. A specimen in the possession of Naumann himself was obtained near Brunswick in the month of September; and his brother saw an old bird near there in the summer of 1820. According to Von Negelin one was caught in a snare near Oldenburg in 1847, and another is stated to have been seen at Blankenburg. Dr. Rudolf Blasius states (*J. f. O.* 1863, p. 50) that one in the Göttingen Museum was caught in a snare near that town; Pastor Jäckel records (*J. f. O.* 1854, p. 491) the occurrence of one in June 1853 near Osterhofen, in Lower Bavaria; it is stated by Von Kettner to occur rarely in the Black Forest; and Dr. Zander records it from Würtemberg, where he believes that it may breed. On one occasion it has been met with in Denmark, where Mr. Collin says (*Skand. Fugle*, p. 224), a female was shot in 1822, in Herlufmagle, by Pastor Appeldorn, and is now in the Royal Museum, and that one was seen by Mr. Frees Hornemann on the 25th February and 9th March 1860, at Hjörning, so close that he could easily identify it: but it was not shot; so there may be some doubt as to the bird being really a Black-throated Thrush. It has occurred in Belgium and France. Dubois, sen., states that one was obtained in the Namur market in October 1844; De Lamotte (*Rev. Zool.* 1848, p. 318) records the occurrence of one near Abbeville in November 1842; and Messrs. Jaubert and Barthélemy-Lapommeraye cite two instances of its occurrence near Marseilles—one at St. Marcel in October 1834, and the other amongst other “gibier” in the market somewhat later. One is recorded by Savi as having been obtained near Turin in January 1826, and is now in the museum of that town; according to Salvadori another example was obtained near Pavia; and Monte refers to a Thrush obtained near

Como, which Salvadori is inclined to believe is the present species. It is stated by Naumann and Degland & Gerbe to have occurred in Sardinia; but this statement is not indorsed by the Italian ornithologists. Althammer mentions two occurrences of the present species in the Tyrol; and, according to Dr. Anton Fritsch, Herr Lokaj purchased a young male amongst some Fieldfares in the Prague market; Von Pelzeln states that one in the Vienna Museum was obtained at Anspang in October 1823; Dr. Gloger says that it has occurred in Silesia; and Brehm in Hungary. Dr. Hedenborg says that Sundevall identified a Thrush brought by him from the peninsula of Sinai as belonging to the present species; but there is no record of its occurrence in Africa.

In Asia the range of the Black-throated Thrush is less extensive than that of *Turdus naumanni* and *Turdus dubius*. It was not included by Pallas; nor has it been met with by any of the later travellers in Eastern Siberia, except by Dr. Dybowski; and it appears to be restricted more to the western portion of Asia. Dr. Severtzoff, who met with it somewhat numerously in Turkestan, says that it breeds there, and is also met with in the winter; and Mr. Blanford writes (E. Persia, ii. p. 158) as follows:—"I found the Black-throated Thrush common in Baluchistan in winter. It was especially so in the miserable apologies for gardens at Gwáder, one of the most desolate of inhabited spots on the earth's surface, where I can only explain the occurrence of this bird by the circumstance of its being unable to migrate further south on account of the sea; and as confirming this view, I may mention that I saw several of these birds on some very cold days in January, when, as we afterwards learnt, all the higher plains in Persia were covered with snow. The birds were very tame, searching for food around the houses on the open sand-downs. Elsewhere I only saw this bird in fairly wooded localities, such as the plains of Píshín and Manel. I, however, did not see it in the much more fertile and better-wooded plains of Bampur and Narmashir; and I think it probable that before I reached those places, in the commencement of April, these birds had migrated northwards. Nor did either Major St. John or I ever meet with *T. atrigularis* on the Persian plateau." Dr. Jerdon (B. of India, i. p. 529) says that it is found throughout the Himalayas, inhabiting the higher ranges in the interior in summer, but descending to the lower ranges in winter; and it is even occasionally found in the plains of Lower Bengal. Mr. Blyth records it as not uncommon near Darjeeling in winter. It keeps to the more open woods at an elevation of from 3000 to 8000 feet, and is occasionally seen on roads and pathways. It feeds both on insects and berries. According to Mr. Blyth it has occurred near Calcutta; and Captain Beavan writes (Ibis, 1870, p. 326) that though he did not meet with it near Umballah, he was informed by Dr. Scott that it was tolerably abundant there in the cold weather, and he obtained several specimens. According to Dr. Dybowski (J. f. Orn. 1872, p. 440) it is rare in Dauria on passage. He first noticed it on the 28th March, and from then until the 15th April. In the autumn of 1870 a specimen was killed early in November; and in the winter of 1871-72 numbers wintered in the valleys of the Baikal district.

But little is known respecting the habits of this Thrush; and, indeed, all that I find on record is included in the meagre notes above given. Its nest and eggs are, so far as I can ascertain, quite unknown; and authentic specimens of the latter are not, I believe, known to exist in any collection.

Dr. Severtzoff has described (Turk. Jevotnie, p. 118) as new a species of Thrush which very

closely resembles the female and young of the present species; indeed, judging from an examination of the skins alone, I should be very doubtful of the advisability of separating it as a distinct species; but Dr. Severtzoff, who has had such ample means of comparing these Asiatic Thrushes, and of observing them in a state of nature, assures me that it must be treated as distinct. This species, which he has called *Turdus mystacinus*, differs but slightly from the female of *Turdus atrigularis* in general appearance, in having the chin and centre of the throat white, the markings being less generally diffused; the throat is washed with pale warm buff; and the markings on the underparts are more drop-shaped than in the female of *T. atrigularis*. Dr. Severtzoff informs me that the male never assumes the black throat as in *T. atrigularis*. His theory is that *Turdus mystacinus* is the original species from which almost all the other species of Siberian Thrushes have sprung, and that it will in time disappear, leaving the other forms which have gradually diverged from it in different directions, as perfectly good and distinct species without any intermediate specimens as connecting links. He brought with him a considerable series of specimens showing the great individual variation in this species as illustrating his theory; and some of the most interesting of these I still have. Amongst them I may mention one showing a great tendency towards *Turdus musicus*, both in the coloration of the upper parts, and in the spotting and marking of the underparts. I have not been able to compare it with *Turdus auritus*, Verr., the Mongolian form of our Song-Thrush; but it is not improbable that it resembles this species perhaps more closely than it does *Turdus musicus*. I have also examples of both *Turdus dubius* and *Turdus naumanni* in immature plumage which show a marked resemblance to some of the specimens of *Turdus mystacinus* belonging to Dr. Severtzoff; and this gentleman assures me that he has seen examples intermediate between this species or *Turdus atrigularis* and *Turdus ruficollis*. Altogether the individual variation in these Siberian Thrushes is so considerable as to make it by no means astonishing that so great confusion has hitherto existed in the determination of the various species, and more especially in their synonymy. Although, as will be seen by the lists at the foot of my articles, I have had a tolerably fair series for examination, I find that it is by no means sufficient to enable me to work out as fully as I should wish to do this question mooted by Dr. Severtzoff, and must reserve my opinion until I can gather together a much larger series of the various species than it is now possible to obtain.

The specimens figured are the adult male and female above described, both of which are in my own collection.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a, ♂ *ad.* Chodjent, Turkestan, December 13th, 1868 (*Severtzoff*). *b*, ♂. Chimkent, Turkestan, February 20th, 1866 (*Dode*). *c*, ♂ *juv.* Chimkent, November 8th, 1866 (*Severtzoff*). *d*, ♂ *juv.* Chimkent (*Dode*). *e*, ♂ *ad.* Gwader, Baluchistan, December 1871 (*W. T. Blanford*). *f*, ♀. Himalayas (*Marshall*). *g*, ♂, *h*, ♂, *i*, ♀. Simla (*Tytler*). *k*, ♂ *juv.* Lahore, March 7th, 1868 (*Marshall*). *l*, ♂ *juv.* Nynetal, India (*Marshall*).

E Mus. N. Severtzoff.

a, ♀. Taschkend, September 25th, 1874 (*S.*). *b*, ♂. November 25th. *c*, ♂. December 4th, 1874, Taschkend (*S.*). *d*, ♀. Delta of the Oxus, September 25th.



SIBERIAN THRUSH.
TURDUS SIBIRICUS

TURDUS SIBIRICUS.

(SIBERIAN THRUSH.)

Turdus sibiricus, Pall. Reise Russ. iii. App. p. 694 (1776).? *Turdus aureus*, Pall. Zoogr. Rosso-As. i. p. 448 (1811).*Turdus leucocillus*, Pall. tom. cit. p. 450 (1811).*Turdus bechsteinii*, Naum. Vög. Deutschl. ii. p. 310 (1822, partim).*Turdus aureus*, Gloger, Isis, 1828, p. 1041.*Turdus atrocyaneus*, Homeyer, Isis, 1843, p. 604.“*Turdus mutabilis*, Temm.,” Bp. Compt. Rend. xxxviii. p. 5 (1854).*Cycloselys sibiricus*, Bp. Cat. Parzud. p. 5 (1856).*Figuræ notabiles.*

Gould, B. of Eur. pl. 82; Naumann, Vög. Deutschl. pl. 69. fig. 2, pl. 363; Temm. & Schl. Faun. Japon. pl. 31.

♂ *ad.* pileo et capitis lateribus nigris, plumis saturatè schistaceo marginatis: striâ superciliari magnâ albâ: corpore suprâ saturatè ultramarino-schistaceo fere nigro, plumis centraliter nigris: remigibus nigris, extûs ultramarino-schistaceo marginatis et ad basin in pogonio interno albis: caudâ nigrâ vix schistaceo tinctâ, rectrice extimâ utrinque in pogonio interno albo apicatâ: subtûs ut suprâ coloratus, sed in abdomine pallidior, abdomine centrali albo, subcaudalibus saturatè schistaceis albo terminatis: rostro nigro-corneo, ad basin pallidiore: iride fuscâ: pedibus pallidè brunneis.

♀ *ad.* suprâ brunnea vix olivaceo tincta, pileo saturatiore, striâ superciliari angustiore et pallidè flavo-cervinâ nec albâ: remigibus saturatè fuscis, extûs rufescente olivaceo marginatis: tectricibus alarum brunneo-ochraceo apicatis, remigibus ad basin pogonii interni flavido-albis: caudâ saturatè fuscâ vix olivaceo lavatâ, rectrice extimâ utrinque in pogonio interno albo apicatâ: capitis lateribus albis ochraceo tinctis et fusco notatis: mento flavo-albido, utrinque striâ fuscâ notato: corpore subtûs albo, gutture ochraceo lavato: gutture, pectore et hypochondriis fasciis semilunatis notatis: abdomine centrali albo: subcaudalibus albis, fusco notatis.

Adult Male (Chefoo, May). Crown and sides of the head deep black, the feathers margined with dark slate; over and behind the eye is a broad, pure white streak; upper parts very dark bluish slate, almost black, the shafts and central portions of most of the feathers being black; tail black with a slate-blue tinge, the outermost rectrix with the terminal portion of the inner web white; quills blackish, externally margined with slate-blue, all except the outermost quills with a large patch of white on the basal portion of the inner web, which forms an oblique white band across the undersurface of the wing; under wing-coverts and axillaries white, tipped with dark slate; throat and upper breast coloured like the back, but becoming paler towards the vent; centre of the abdomen white; under tail-coverts dark slate, tipped with white; bill blackish horn, lighter at the base; iris dark brown; legs light brown. Total length about 9 inches, culmen 0·85, wing 4·65, tail 3·45, tarsus 1·2.

Adult Female (Java). Upper parts warm hair-brown with a faint olivaceous tinge; crown darker, and the

feathers on the back with somewhat darker centres; a dull yellowish indistinct streak passes over and behind the eye; quills dark brown, externally margined with warm reddish olivaceous; spurious wing dark towards the tip, and wing-coverts tipped with warm ochraceous; tail dark brown, the upper surface with an olivaceous tinge, the outer rectrix with a terminal patch of white on the inner web; sides of the head white with a yellowish tinge, and spotted with brown; chin yellowish white, bounded by a dark brown streak from the base of the lower mandible, rest of the underparts white, the throat washed with yellowish; throat, breast, and flanks marked with semilunar brown markings; centre of the abdomen pure white; under tail-coverts white slightly varied with brown; the characteristic oblique bar on the under surface of the wing yellowish white, and not pure white. Culmen 0·85 inch, wing 4·6, tail 3·45, tarsus 1·2.

Young Male (Tingchow, October). Upper parts as in the adult male, but duller, and tinged, especially on the head, with brown; superciliary stripe narrow, and yellowish white; throat and sides of the head as in the female; rest of the underparts as in the old male, but paler and duller; the upper part of the breast marked with light yellowish brown as in the female.

Of all the Thrushes included in our European avifauna, the present species is perhaps the least-known; and, so far as I can ascertain, no one yet knows of any place where it is really common. It is only met with in Europe as a very rare straggler during the seasons of passage, and has only been recorded from the northern portion of Central Europe, except in one or two instances. It has been once obtained in Great Britain. A specimen was sent to Mr. Bond as a variety of the Redwing, having been obtained between Guildford and Godalming in the winter of 1860–61. This bird I have examined; and it is certainly referable to the present species. I find no instance on record of its occurrence in Scandinavia or Northern Russia; but it has been obtained in Germany. Naumann says (Vög. Deutschl. xiii. p. 361) that he obtained a young bird, which still had remains of the nestling-feathers in its plumage, from Brunswick a few years previous to 1822, and adds that it was caught in a snare in the Harz, and sent to Brunswick in the flesh; on the 22nd October, 1828, the Museum of Breslau received a young one caught in Upper Silesia; a third was sent from the same locality to Mr. Heine, of Halberstadt; a fourth is in the collection at Neustadt-Eberswalde; one was caught on the Lower Oder; and a fine old male was caught on the 1st October, 1842, on the island of Rügen, and is in the collection of Mr. E. von Homeyer. As above stated, Naumann refers only to one specimen as being in the collection at Neustadt-Eberswalde; but Mr. C. Vangerow speaks (J. f. O. 1855, p. 186) of two being in that collection. In France, Messrs. Degland and Gerbe state, it has but once occurred, an immature male having been killed in 1847 by Mr. Loche in the marsh of Saintonge. Messrs. Elwes and Buckley state (Ibis, 1870, p. 196) that one was killed near Kustendji, in Turkey, by Mr. A. Cullen. In Asia the present species is also rare; and nothing positive is known respecting its breeding-haunts. Pallas says that it inhabits Eastern Siberia and is found on the northern portions of the Jenesei and Lena and in Central and Lower Tunguska. He only once met with it in Dauria. Neither Middendorff nor Schrenck records it; but Dr. Radde met with it twice on passage, and states that he saw an old male on the 8th May, 1856, and a young female on the 9th May at the Tarei-nor on passage, and obtained the latter. According to Mr. Taczanowski, Dr. Dybowski found it rare in Dauria about the end of May, and obtained a young bird on the 13th October. It is stated to occur in China and Japan. Mr. Swinhoe

obtained it at Pekin, and at Whampoa on the 18th April, and writes (*Ibis*, 1874, p. 443) as follows:—"For some days towards the end of May these Thrushes were about our hills (at Chefoo), apparently bound north. On the 22nd Mr. Carles shot three males, all sexually well advanced." Specimens are also in Mr. Swinhoe's collection from Chefoo. It has been obtained in Burmah, where Mr. Wardlaw Ramsay procured a specimen at Karen-nee at an altitude of 2500 feet on the 1st March; and it also occurs in Java, whence I possess a specimen sent to me by Dr. Otto Finsch, of Bremen.

Respecting the habits of the present species I find nothing on record; and it is as yet quite unknown where it breeds. It is to be hoped that, as Asia is being so rapidly opened up by Russian enterprise, we shall ere long be able to obtain reliable information respecting the breeding-habits of the present species, as well as of several others about which information is greatly needed.

The specimens figured are an adult male and an adult female, being those above described.

In the preparation of the above article I have examined the following specimens:—

E. Mus. H. E. Dresser.

a, ♂ *ad.*, *b*, ♂ *juv.* Chefoo, China, May 1873 (*R. Swinhoe*). *c*, ♀ *ad.* Java (*Dr. O. Finsch*).

E. Mus. R. Swinhoe.

a, ♂ *ad.* Whampoa, China, April 18th, 1860 (*R. Swinhoe*). *b*, ♂ *ad.* Amoy, April 19th, 1861. *c*, ♂ *juv.* Tingchow, October 1870. *d*, ♀ *ad.* Chefoo, June 3rd, 1873 (*R. S.*).



BLACKBIRD.
TURDUS MERULA

TURDUS MERULA.

(BLACKBIRD.)

Turdus merula, Linn. Syst. Nat. i. p. 295 (1766).*Merula vulgaris*, Leach, Syst. Cat. Mamm. &c. Brit. Mus. p. 20 (1816).*Merula merula*, Boie, Isis, 1822, p. 552.*Sylvia merula*, Savi, Orn. Tosc. i. p. 205 (1827).*Merula vulgaris*, Selby, Brit. B. i. p. 167 (1833).*Merula pinetorum*, Brehm, Vög. Deutschl. p. 372 (1831).*Merula truncorum*, id. op. cit. p. 373 (1831).*Merula alticeps*, id. op. cit. p. 373 (1831).*Merula carniolica*, id. op. cit. p. 374 (1831).*Merula major*, id. Naum. 1855, p. 281.

Blackbird, *Black Thrush*, *Ouzel*, *Garden-Ouzel*, *Merle*, English; *Lon-dubh*, Gaelic; *Merle noir*, French; *Merlo comune*, Italian; *Mirlo*, Spanish; *Merol preto*, Portuguese; *Malvitz isued*, Maltese (*C. A. Wright*); *Schwarzdrossel*, German; *Zwarte Lijster*, Dutch; *Koltrast*, Swedish; *Solsort*, Norwegian; *Solsort*, *Sort drossel*, Danish; *Mustarastas*, Finnish; *Czernoi Drozd*, Russian; *Kos*, Polish; *Carra tawook*, Turkish (*T. Robson*).

Figuræ notabiles.

Montb. Pl. Enl. 2: 555; Werner, Atlas, Insectivores, pl. 16; Gould, B. of Eur. ii. pl. 72; Yarr. Brit. B. i. p. 202 (1843); Naum. Vög. Deutschl. ii. Taf. 71; Kjærb. Orn. Dan. Afb. 16. fig. 5, et Suppl. 6. fig. 2; Schl. Vog. Nederl. pl. 104; Fritsch, Vög. Eur. tab. 24. fig. 10; Gould, B. of Gt. Br. pt. ix.; Sundev. Sv. Fogl. pl. 10. figs. 3, 4; Keulem. Onze Vogels, pl. 23; Bettoni, Ucc. Lomb. tav. 14.

♂ *ad.* sericeo-niger: remigibus subtùs cano nitentibus: rostro lætè aurantiaco: pedibus fusco-brunneis, plantis flavidis: iride saturatè brunneâ, annulo ophthalmico lætè flavo.

♀ *ad.* suprâ olivascenti-brunnea, unicolor: remigibus paullò pallidioribus, et extùs pallidiore brunneo marginatis: facie laterali cinerascenti-brunneâ, scapis angustè albido notatis: gutture toto et colli lateribus cinerascenti-albis, conspicuè brunneo longitudinaliter striatis: pectore antico ferrugineo, maculis brunneis triquetris notato: corpore reliquo subtùs cinerascete, hypochondriis clariùs brunnescentibus: subalaribus cinerascentibus: rostro flavicanti-corneo, culmine brunneo: pedibus flavicanti-brunneis: iride fuscâ: annulo ophthalmico sordidè flavo.

Juv. suprâ brunneus, plumis medialiter rufescente distinctè lineatis, tectricibus alarum latiùs notatis: dorso imo, uropygio et supracaudalibus rufescente lavatis, his lætiùs tinctis: remigibus saturatè brunneis, extùs angustè rufescenti-fulvo marginatis: caudâ nigrâ, rectricibus ad apicem acuminatis: fronte cum loris et facie laterali rufescentibus, plumis auricularibus albido angustè lineatis: genis maculis brunneis

variis : vittâ malari indistinctâ : subtùs omninò pallidè rufescens, pectoris plumis ad apicem brunneis : subcaudalibus rufescenti-brunneis, scapis albidis : rostro corneo, mandibulâ paullò pallidiorè : pedibus brunneis, vix flavicantibus.

Pull. suprâ brunneus, capitis et dorsi plumis medialiter fulvo lineatis : dorso postico et uropygio brunneo concolori : tectricibus alarum dorso concoloribus, et eodem modo fulvo lineatis : remigibus brunneis, extùs vix fulvescenti-brunneo lavatis : caudâ nigricanti-brunneâ : fronte lorisque fulvescentibus : facie laterali saturatè brunneâ, plumis auricularibus angustè fulvo lineatis, genis posticis fulvescenti-albis, brunneo variis : gutture albo, fulvo paullulùm lavato, maculis minimis brunneis notato : pectore superiore lætè fulvescente, nigricanti-brunneo conspicuè maculato : corpore reliquo subtùs grisescente, fulvo lavato, pectore inferiore brunneo angustius transfasciato : hypochondriis angustè medialiter fulvo lineatis : rostro corneo, mandibulâ flavicante : pedibus flavicanti-brunneis.

Nestling. Above dark brown, the feathers of the head, upper part of the back, scapulars, and wing-coverts marked with a median line of golden-buff down the centre of each feather, which on the latter feathers slightly widens towards the apex of the plume ; the lower part of the back, rump, and upper tail-coverts uniform dusky brown, washed with a slight shade of lighter brown ; quills dark brown, washed on the outer web with a faint tinge of golden-brown ; tail blackish brown, the feathers narrowing to a point at the tip ; lores and forehead inclining to buff ; sides of the face brown ; the ear-coverts longitudinally streaked with a narrow line of fulvous white along the shaft ; the hinder part of the cheeks whitish, slightly tinged with buff and mottled with small spots of dark brown, which collect on the lower part and form a kind of irregular moustache ; throat white with a very slight fulvous tinge, and marked with very small and irregular spots of brown ; chest golden-buff, the tip of each feather being brown, so as to give a very strongly mottled character to the whole of this part ; the rest of the under surface of the body grizzly brown, the centre of the abdomen clearer grey, the lower part of the breast tinged with fulvous, and narrowly barred with indistinct lines of dark brown, the flanks marked with narrow shaft-lines of buff ; bill horny brown, the lower mandible yellowish ; feet yellowish brown.

Obs. The description of the above nestling bird is taken from a specimen lent to us by our friend Mr. J. H. Gurney, jun. We have before us a bird said to be a female, which has been sent to Dresser by Dr. Renard, from Russia. It is very similar to Mr. Gurney's bird, but is a little older, and the markings are more pronounced. There is a decided shade of rufous on the forehead, and a distinct malar stripe running down each side of the throat ; on the breast the central stripe of fulvous running along the shaft of the feather is much more distinct, the rest of the under surface of the body is rather darker, and some blackish feathers are appearing on the sides of the lower breast ; the throat is fulvous, not white, and the chin is greyish ; the bill dull horny brown, and the legs horny brown, not so yellowish as in the nestling specimen. Although this specimen is marked a female, the presence of the black feathers on the lower breast would seem to indicate that it is a male just commencing to moult. At the same time it is very difficult to determine the difference of sex from colour alone ; for if these dark-coloured specimens are males, the red-coloured ones, such as we have figured in the Plate, are sometimes males also ; for we have one moulting from the rufous into the black stage. We now give a description of the full-grown young bird from a specimen in Dresser's collection, shot by Mr. R. Paraman at West Drayton, in Middlesex, on the 20th of June 1869.

Young (fully grown). Above brown, the feathers of the nape narrowly streaked down the middle with fulvous, these central shaft-markings being broad and inclining to rufous on the head, back, scapulars, and upper wing-coverts, much broader on the last-named parts and on the wing-coverts, and widening

out into a triangular spot; lower part of the back and rump brown, shaded with rufous, which is much clearer on the upper tail-coverts; quills brown, the innermost secondaries faintly glossed with fulvous brown, and the primaries obscurely margined with the same colour; tail entirely black, the feathers pointed at the tips; under surface of the body pale orange-rufous, this colour extending on to the forehead and sides of the face; the ear-coverts narrowly streaked with whitish lines along the shaft; cheeks mottled with little specks of brown, collecting on the lower part, and thus forming an indistinct malar stripe; the throat itself scarcely spotted at all, but the breast covered with more or less distinct small bars of brown, which occupy the tip of each feather; the flanks deepening into rust-colour; the under tail-coverts dusky brown, washed with rufous and lined down the centre with shaft-stripes of buff; bill horn-brown, paler on the lower mandible; feet horn-brown. Total length 9·8 inches, culmen 0·7, wing 4·9, tail 4·1, tarsus 1·35.

Obs. Besides the specimen above described, we have seen another very similarly marked in the collection of Mr. J. H. Gurney, jun.; it is also a young bird, but is slightly more brownish red in colour than the one we have been describing. Another example in our own collection is in very interesting plumage, and is moulting from the rufous dress into the full black of the adult; it has a curious grey band across the tail, which is probably accidental. This bird is certainly a male, and the tinge of the rufous plumage is precisely the same as that described by us above, so that it becomes a question whether the young males are more rufous than the females: on this subject we can find no given information; and Macgillivray does not mention it. We add the following details which Mr. C. R. Davy, of the Kentish-Town Road, London, an experienced bird-fancier, and one from whom we have received many useful hints, has given us on the subject. After admitting that the young birds do vary very much in respect of their rufous plumage, he gives us his experience of the nestling birds as follows:—In the nest the *cock* birds are always the darkest, stoutest in the beak; and these differences are discernible from six days old. The feathers along the carpal joint are black in the young cock, but are brown in the hen; and the quills and tail-feathers are very much lighter in the latter sex, never becoming really black, as in the cock. Another fact which he demonstrated to us by means of a bird now living in his shop, is that the young male Blackbird, although it moults in the autumn after it is hatched, does not shed the quills, or, as he calls them, the *flight-feathers*, until the second autumnal moult; consequently these are brown, while all the rest of the plumage is black, and by this an old male can always be told by its jet-black quills from a bird of the previous year, which has them brown. Mr. W. B. Tegetmeier informs us that the bird-fanciers are in the habit of distinguishing the sexes of the young when in their first uniform brown plumage, by pulling out a few feathers from the breast—which are reproduced of a black colour in the young males, and of a brown colour in the females.

Macgillivray gives the following account of the progress of the young towards maturity:—"After the first moult, which commences in September and is completed by the end of November, the plumage of the males is in some almost uniformly brownish black, while in others the fore neck and especially the breast are more or less lunulated with light brown and grey. In all, the auricular coverts are brownish black, without light-coloured shafts, which is never the case in the young females."

The young male birds of the year, though in black plumage, may always be told by their blackish bill: thus it is that we see some specimens, apparently fully adult, with the latter black; and we have been asked by several people whether the yellow of the bill disappeared in the winter season: but there can, we think, be no doubt that when once the bill has become yellow it never changes, only deepening into a fine orange as the bird gets older. On examining these black-billed specimens it will also be observed that the black plumage is more or less shaded with brownish, and even in some yellow-billed birds this shade is apparent, showing that the fine silky black plumage is only assumed by the very old birds.

Adult Male. Silky black, the wings a little paler, inclining to silvery grey on the under surface of the wing; bill orange; feet dark brown; the soles yellow; eyelid orange. Total length 10·5 inches, culmen 1·05, wing 4·8, tail 4·4, tarsus 1·35.

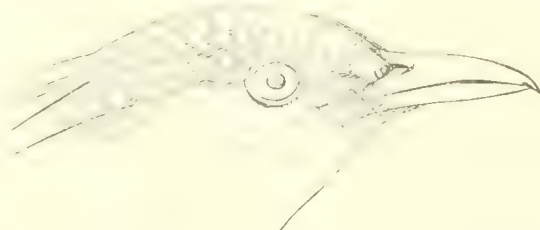
Adult Female. Above dusky olive-brown, entirely uniform; the ear-coverts a trifle inclining to ashy brown, with the shafts indicated by a narrow whitish line; wing-coverts exactly the same colour as the back, some of the outermost of the greater and primary coverts washed with clearer brown on the outer web; quills brown, the inner surface silky white, the primaries externally margined with paler brown, somewhat inclining to white towards the tips of these quills; tail uniform dark brown; throat and sides of the neck greyish white, the former spotted and streaked with very dark brown; upper part of the breast ferruginous, mottled all over with triangular markings of dull brown; the rest of the under surface of the body greyish, the flanks strongly inclining to brown; under wing-coverts ashy brown; bill dull yellow, browner along the culmen; feet yellowish; iris dark hazel; eyelid dull gamboge. Total length 10 inches, culmen 1·0, wing 4·9, tail 4·2, tarsus 1·35.

Obs. Macgillivray gives the colour of the bill in the female as dark brown; but we have no doubt, judging from the series of specimens now before us, that the adult bird gets a yellow bill, perhaps never so bright as in the old male. Mr. Robson says that in Turkey "the old male and female have each of them a yellow bill." The hen Blackbird certainly exhibits great variation in plumage; but the differences seem to us to be in great part due to age: thus some specimens are very dark underneath with scarcely any tinge of ferruginous; while others are much paler, and the reddish colour extends nearly up to the chin or far down on to the lower breast.

Before these differences can be clearly understood, however, it will be absolutely necessary to have a large series of specimens, from all localities, carefully sexed and dated. This we cannot say that we have at present; and we feel dubious as to the correct determination of some of the sexes in the specimens we have examined. Many of the darker-coloured specimens collected in Durham by Mr. J. H. Gurney, jun., appear to us to differ from other English examples, and may very probably be migrants from the Continent. Again, another female in Mr. Howard Saunders's collection, shot in the Sierra Nevada in April 1871, is remarkable for the grey underparts, with scarcely a trace of ferruginous on the breast, and only a few spots of brown. When we consider that under the diligent observation of the late renowned ornithologist Professor Savi, of Pisa, a very distinct race, if not actually a species, of Blackbird was found in Italy, we may well consider whether the history of the species is thoroughly understood.

To this race further reference is made below, as also to *Turdus dactylopterus* and the Blackbird of the Azores.

On the occiput of the Blackbird, even in the young birds, little tufts of hair are to be seen. This peculiarity was first pointed out to us by the late Mr. Briggs, of Cookham, who was a first-rate practical observer.



He used to consider that this development only took place in very old birds; but we have discovered it in young ones of the year; nor has this fact been unrecorded by the ever-careful Macgillivray, though

he does not refer to the Blackbird by name; but in his account of the Fieldfare (*Turdus pilaris*) he gives a figure of the head with a few bristle-like hairs appended to the occiput, concerning which he writes:—"A few slender undivided filaments project from among the feathers of the occipital region, whence the specific name *pilaris*, or hairy; but these filaments are not peculiar to this species, being equally conspicuous in the Missel-Thrush and others, nor even to the genus, as they are seen in the Redbreast and many small birds besides." We give a woodcut (p. 4) showing these peculiar tufts in the old Blackbird.

Varieties. The Blackbird is subject to many freaks of nature; and it is by no means rare to see specimens with white on the head, hinder neck, and breast. Sometimes albinos are met with; and Mr. Gurney has lent us one entirely cream-coloured.

When we first commenced this article it was our intention to give a review of the genus *Merula*; and for that purpose many kind friends, amongst whom were our staunch supporters Lord Walden, Canon Tristram, and Messrs. Salvin and Godman, lent us all their specimens of the Blackbirds and their allies; but on a closer study of the material we at once found it impossible to define any characters by which the so-called *Merulae* can be separated from the genus *Turdus*. There is, however, something impressed upon the mind of the ornithologist which enforces a distinction between these two divisions, as represented by our own Common Thrush and Common Blackbird; but if once an effort is made to transmit to paper these differences, it will, we believe, be found utterly impossible to define a single tangible character by which a Blackbird can be separated from an ordinary Thrush. Dr. Sclater, in his admirable paper on the genus *Turdus* (*Ibis*, 1861, p. 277), does not attempt to separate them generically; nor does Mr. Gray in his 'Hand-list' (i. p. 255). Here, under the section *Merula*, we find eighteen species enumerated, to which it seems necessary to add at least no. 3717, *T. kinnisii* of Kelaart, no. 3720, *T. torquatus*, no. 3755, *T. serranus*, Tschudi (with which nos. 3767 and 3768 are identical), and no. 3769, *T. infuscatus*, Lafr.; while at the same time there are some African species of the *T. olivaceus* group, and also many South-American species, which have as good a claim to be included in the section as no. 3705, *T. javanicus*, concerning which Mr. Blyth remarks (*Ibis*, 1866, p. 376) that it "might range either in *Merula* or *Geocichla*," while, if there still exists any real wish to divide the Blackbirds and Thrushes, no. 3699 of Mr. Gray's list (*Merula unicolor* of Gould) must be struck out; for Mr. W. E. Brooks writes in 'The Ibis' (1869, p. 51) that it is "a true *Turdus*, more closely allied to *T. iliacus* than to any other species, and should stand as *T. unicolor*." These few remarks will show the difficulties attending an attempt to raise up a genus *Merula* as distinct from *Turdus*; still it is not to be denied that the real *Blackbirds* do constitute a more or less defined section of the Thrushes, with a range extending from the Western Palearctic Region, where they are represented by *Turdus merula* and *T. torquatus*, to China, where *T. sinensis*, the first cousin of our own Blackbird, takes their place, thence through India, where *T. albocinctus*, *T. bouboul*, *T. nigropileus*, and *T. simillimus* continue the representatives, to Ceylon, where *T. kinnisii*, a small but typical Blackbird, of which Mr. E. W. H. Holdsworth has kindly lent us a nice series of specimens for examination, supplies the link in the chain of extension to the eastward, till we find in the island of Vanikoro the last species of *Blackbird* in the Old World (*cf.* Blyth, *Ibis*, 1867, p. 304). In America there are two Blackbirds, the males of which are wholly black, and of which Dr. Sclater has shown us specimens, viz.:—1. *Turdus serranus*, ranging from Tobago and Trinidad through Venezuela, Columbia, and Ecuador into the highlands of Peru, where the original specimens were obtained by Tschudi; 2. *T. infuscatus*, confined to Southern Mexico and the highlands of Guatemala. Another group of Meruline Thrushes is seen in *T. castaneus* and *T. gouldii*, which type extends from India and Eastern China southwards to Australia and the islands belonging to the Australian avifauna, such as New Caledonia, Lord Howe's Island, &c. The affinities of the African Thrushes, which have been placed in the genus *Merula*, seem rather to lie in the direction of the South-American species than of those from more eastern localities.

THE Blackbird does not inhabit the extreme north of Europe, and generally migrates on the approach of winter from those parts of Scandinavia which it visits. As a rule, however, it is by no means a rare bird all over Europe, breeding in nearly every country; but the southern and south-eastern portions of the continent receive an influx of migrants from the north in the cold weather. It is found in all the western countries and islands, while in this direction it sometimes extends to the Færoes and Iceland.

In commencing with the most westerly limit of the Blackbird's range yet known, we give the following remarks of Professor Newton as regards the occurrence of the species in Iceland, where it has been supposed to have been twice observed. He writes:—"The first, in 1823, is mentioned by Herr Preyer, on the authority of Gliemann; the second, in March 1860, by Mr. Metcalfe. But even if there is no mistake, in either case it must be regarded as a very exceptional visitor." We learn also from Herr Sysselmand Müller that it is sometimes seen on the Færoes; and we have next to consider its range throughout the British Islands. Mr. Thompson records the Blackbird as "common and resident throughout the wooded districts of Ireland." He adds:—"They likewise resort to the islands off the coasts. In the summer of 1827 I remarked them among the underwood sparingly scattered over the Lighthouse Island (one of the Copelands), off the county of Down. Dr. J. D. Marshall mentions one or two being occasionally seen in the wild island of Rathlin, about a garden, where they sometimes breed. The indigenous birds do not congregate with us; nor have I ever heard of flocks being seen in any part of this country on their migration from the north of Europe, as they have been in England. They are indeed stated to be more numerous about Tralee (co. Kerry) in winter than in summer; but their comparative scarcity at the latter season is attributed to the want of woods and thickets wherein to build." Mr. A. G. More, in his well-known and able paper, gives the distribution of the Blackbird during the nesting-season as extending all over Great Britain, and he states that it "nests regularly even in the most northern parts of Scotland and in Orkney; but apparently does not extend to Shetland, nor to "the northern and more remote Hebrides" (*Macgillivray*). Further information as to the distribution of the species in these last-named islands is afforded by Mr. Robert Gray, who gives the following account of the distribution of the present species in the west of Scotland:—"The Blackbird is common at times only in the outer group of the Hebrides. On Lewis, although a well-known resident, it is not so numerous as the Thrush; but the great improvements near Stornoway will no doubt attract the species more in future, and it may therefore be expected to increase. On Harris it is likewise resident, and also on North Uist, but in very limited numbers; while on Benbecula it is wholly absent in summer, being only a winter visitant. On Iona and Mull it is a winter bird only; but in some of the other inner islands it is resident. I have found several pairs of Blackbirds on Ailsa Craig; one of these had their nest in a turret-hole of the old castle ruins, nearly halfway towards the summit of the island. I remember, one very hot day in July, hearing a Blackbird sing in a cave there; it had penetrated to the inmost recesses of this dark abode, which must have been a familiar haunt, as on going in to ascertain its extent, I found the bird was able to steer directly out of it, without flitting by side jerks, until it regained the entrance. In some districts of Scotland Blackbirds have of late years multiplied to a great extent; the island of Arran, for example, since the destruction of birds of prey there, has been completely overrun with them. After the breeding-

season is over, these birds, in Ayrshire, repair in great numbers to the sea-coast between Girvan and Ballantrae, seeking shelter in hot days under blocks of stone and large flat rocks lying on the beach. On one occasion I turned out eighteen Blackbirds from under a flat rock, resting on broken stones, by poking them with a walking-stick. I have seen Sparrow-Hawks and Merlins (apparently aware of this habit) hunting these rocks at midday, where the Blackbirds were all concealed, but pertinaciously beating about in the neighbourhood, knowing their quarry to be there, though unable in the mean time to dislodge it." Its range to the extreme north of Scotland is established by Dr. Saxby, who, in a list of the birds of Shetland, published in the Huddersfield 'Naturalist' (vol. ii. p. 142), classes the present species among the winter visitants, observing that it is "said to be of not unfrequent occurrence in the south of Shetland, but it was certainly unknown in Uist until very lately." In the winter season the numbers of our indigenous birds, at least on the eastern coast of Great Britain, are augmented by migrants; for Mr. Selby states that "about the beginning of November vast flocks of Blackbirds make their appearance upon our coasts from more northern countries. They remain but a few days, to recruit, and then resume their flight in a south-westerly direction;" and Mr. Stevenson also, in the 'Birds of Norfolk,' says that "migratory specimens apparently arrive in the autumn."

Nilsson says the Blackbird belongs more especially to the southern and central portions of Scandinavia; but it also occurs far to the northward, and is not only met with in the Wärdale, north of Trondhjem, but also in Lapland. Lövenhjelm found it up in Lycksele, Lapland, at the foot of Issjak fell. In the north, however, it is very rare; but in the south is found at all seasons of the year, being in Skåne even more numerous in winter than in summer. By Sommerfeldt and Wheelwright the present species was not noticed in Lapland. Mr. R. Collett states that it is "distributed over all Norway up to the Polar circle; and the Messrs. Godman found it nesting at Bodö above 67°. In the province of Trondhjem it breeds tolerably numerous, both on the larger islands, such as Hitteren, and in the interior. It is particularly abundant in the coast-districts of Christiansand and Bergen, but is scarcer in the eastern dales, as, for instance, Gudbrandsdal, Valdres, and Østerdal. On the fell-sides it is no longer found in the subalpine region. Individuals passing the winter with us may be seen annually on the coast up to Trondhjemsfiord." We are informed by Mr. Alfred Benzon that, "with the exception of *Turdus musicus*, it is the commonest of the Thrushes that breed in Denmark, being in some parts even more numerous than the Song-Thrush, though it is not so generally distributed as the last-named species. Its migrations are the same as those of the Song-Thrush, and but few old birds are found here in the winter." According to Von Wright it breeds very sparingly in Southern Finland. He found them in families at Drumsö, near Helsingfors, and on an island near Borgå. Dresser never succeeded in procuring or even seeing a single one in that country.

Borggreve states that it is a resident and partial wanderer in the western part of Germany, where it is common; in the east it is much less numerous, especially in the winter. In the mountains it extends its range up to the vertical boundary of the forest. Dr. E. Rey tells us that it remains in the neighbourhood of Halle throughout the winter. Herr W. Schlüter has sent us several specimens from different parts of Germany, showing that it is found all over Central Europe. Herr A. von Pelzeln mentions specimens as being preserved in the Imperial Cabinet at Vienna from different parts of the Austrian empire; and in Styria, according to

Seidensacher, it is found breeding in larger or smaller numbers, according to the nature of the country.

Mr. H. M. Labouchere writes to us as follows:—"In Holland this bird is very common, and may be found throughout the whole country, as well in the woods and parks as in the gardens behind the town houses. In a garden in the town of Amsterdam I found, in some ivy covering a wall, two nests of the Blackbird, at a distance of about ten yards from each other." Baron de Selys-Longchamps says that in Belgium it remains throughout the year in the large woods, and in the other parts of the country is common during migration in March and October, some remaining the winter through. In Luxembourg, according to De la Fontaine, it is partly migratory, partly resident, as in the north they all appear to migrate. Godron states that it is common in Lorraine, from the spring to the autumn, in the woods and orchards, some few passing the winter there. In Alsace it is said by Krœner to be sedentary, both in the mountains and in the plains. Throughout the whole of France it is a common resident bird; and, according to Bailly, it is found in Savoy throughout the year, but is rather less numerous during the winter than in the summer. Concerning the Blackbird in Southern Spain, Mr. Howard Saunders observes that it is "very abundant, and resident throughout the year. The eggs are much brighter in colour than the majority of British specimens." We may mention that the female bird in Mr. Saunders's collection seems to be somewhat different from examples of the same sex from other localities. Major Irby also tells us that it is "very abundant in Andalucia, particularly in the winter, when many arrive from the north. Great numbers, however, are resident; and the species breeds on the rock of Gibraltar. It is equally common in Marocco, where I once saw a nest built in a prickly-pear hedge, a strange site for the nest of our English Blackbird." In Portugal also the present species is abundant, as stated by the Rev. A. C. Smith. It likewise occurs in the Canaries; and Mr. Gould, in the course of his outward voyage to Australia, observed the Blackbird on Teneriffe. Mr. E. Vernon Harcourt states that it breeds in Madeira. In the Azores Mr. F. Godman procured several specimens; and he says that it "frequents the mountain-districts rather than the gardens and low country." He has most kindly lent us the birds obtained by him during his visit to these islands; they appeared at first to be smaller than the usual run of European specimens; but on a comparison of the actual measurements we can discover no real differences.

Besides the above note of Major Irby's respecting the Blackbird in Marocco, we also learn from Mr. C. F. Tyrwhitt Drake that it is very plentiful both in Tangier and Eastern Marocco. In Algeria Mr. J. H. Gurney found it "common, but very shy;" and Taczanowski observed large numbers in that country, wintering in the oases, but met with it more rarely in the hills. According to Loche it is common there throughout the year, and especially affects rivulets the banks of which are overgrown with bushes, while it often approaches inhabited places. Mr. O. Salvin writes:—"The Blackbird is common in the wooded parts of Tunis. It appears to be a resident in the Eastern Atlas, as we obtained several nests near Souk Harras." In Malta Mr. Wright states that it "arrives annually in October and November. A few remain the winter, individuals having been taken in December, January, February, and even in March. It leaves in spring." Professor Doderlein remarks that in Sicily it is also very common, especially in winter, some remaining to breed; but the majority return northwards in spring. He adds

that it is also abundant and partially resident in Sardinia. Count Salvadori states that in Italy the Blackbird is found, and is resident throughout the country, but that in October their numbers receive large reinforcements from the north on their passage southwards. In a paper by Baron De Selys-Longchamps on birds observed by him in Italian Museums (*Ibis*, 1870, p. 452), he remarks:—"In the Museum at Pisa there is a bird which differs from *Turdus merula* in that the male never becomes quite black, and that the female has the breast of a more lively red. Professor Savi calls it the 'Merle maritime,' and believes that it comes from Africa." Immediately on reading this notice we wrote to our friend Count Salvadori, of Turin, requesting him to use his good offices with Professor Savi to procure us the loan of a pair of these birds for figuring in the present work. Unfortunately Savi died about the time our request was preferred, and Count Salvadori has been, up to the present time, unable to procure us the sight of the male of this curious Blackbird; but he has sent us a female out of the Turin Museum, which is a very remarkable bird, quite different from any female of the common species yet examined by us. When the male arrives we shall give a further account of this bird. With respect to the communication of Baron De Selys-Longchamps, Count Salvadori writes to us:—"I have been much surprised at the name used by Baron De Selys-Longchamps; for Savi used to speak to me of the bird under the title of *Turdus merula*, var. *montana*, and I have never heard him express an opinion that it came from Africa. It is not uncommon in the Maremma Toscana, where it seems to be permanent; all the specimens that I have seen were females."

Captain Sperling, in his notes on the ornithology of the Mediterranean, says that he found it in Rhodes, Greece, and the Ionian Islands, where it is not very plentiful in summer, but in winter is in the greatest abundance, owing doubtless to the arrival of migrants from the north. Lord Lilford found it abundant in Corfu, Epirus, and Albania, in winter. "I imagine," he adds, "as in the case of the Song-Thrush, that a few pairs breed in Epirus." Lindermayer says it is resident in Greece. In the winter it inhabits the olive-groves on the plains, in bushy desert places; but early in March it leaves these localities for the mountains, where it breeds. Dr. Krüper also writes to us that it is very common in Greece during the winter, and in summer is found breeding in all the mountains. Messrs. Elwes and Buckley found it plentiful in Turkey; and Mr. Robson writes to us from Ortakeuy:—"The Blackbird is abundant both in European and Asiatic Turkey, where it is migratory, great numbers arriving in the middle of October." Professor von Nordmann states that "in Southern Russia large numbers breed, disappearing about the end of October, about the same time as the Song-Thrush. When the fruit of the *Cratægus oxyacantha* is ripe, it often visits the large gardens in New Russia and Bessarabia." Our friend Dr. L. Taczanowski writes to us as follows:—"It is common everywhere in Poland, arriving early in April and leaving in the first half of October. Some few winter in the thickets skirting the rushes; but these are always males. I have seen some dozens at this season, and never observed a female amongst them." It is found, according to Pallas, in the woods of Western Russia, and goes as far as the river Kama; it is also common in the gardens and woods of the Crimea. Ménétré also observed the Blackbird during his journey in the Caucasus. Sabanaef states that it does not go eastward of the Ural.

It was seen only once by De Filippi during his visit to Persia, in his garden at Tedgrisch; Pallas, however, says that it winters in that country; but Messrs. Dickson and Ross procured the

present species at Erzeroom on the 28th of March, from which day up to the 7th of April they observed it in burying-grounds. It was reported to them to be common in winter both at Tortoom and Trebizond. In Palestine, Canon Tristram states that he found the present species "scattered in every part of the country throughout the year, remaining to breed even in the sultry Ghor. It was nowhere abundant, and was one of the most retiring and shy of the inhabitants of the thickets." He has lent us his specimens from Palestine; and he rightly states that they are exactly the same as the European bird. Hemprich and Ehrenberg named a Blackbird from Syria *Turdus merula*, var. *syriaca*, stating that it differed from the ordinary species in having a stouter bill and feet, and also a longer tail. Only one specimen was collected, in which the bill was white and the fourth quill the longest. Canon Tristram's specimens measure as follows:—

| | Total length. | Culmen. | Wing. | Tail. | Tarsus. |
|--|---------------|---------|-------|-------|---------|
| 1. ♂, Jebel Ajlun, Bashan, March 14, 1864. | 10·5 | 1·1 | 4·95 | 4·6 | 1·35. |
| 2. ♀, Jericho, January, 2, 1864. | 10·3 | 1·05 | 4·8 | 4·4 | 1·3. |

It will require a much larger series to prove whether the slight differences between the measurement of these Palestine birds and the English examples given above will hold good. We should hardly think that the Blackbird from these parts can be different: and too much reliance cannot be placed upon the measurements; for in the present species there is a great variation in size, even in specimens from the same locality. Again, as regards the Hook-winged Blackbird of Syria (*Turdus dactylopterus*), we cannot believe that this is any thing else than an individual variation; for it must be remembered that, although many people have visited Palestine and Syria, no one has ever succeeded in getting a second specimen of the bird, and Bonaparte's type still remains unique in the Paris Museum. Through the kindness of our friend M. Jules Verreaux we have received a drawing by M. Huet of the wing of this bird, thus enabling us to present our readers with a woodcut of the "hook."



Any one who has studied Thrushes will, we think, agree with us in considering this hook only an abnormal development of the knob which is always to be found on the carpal bend of the wing in these birds; and we must set it down as such until confirmatory evidence of the existence in Syria of a distinct species has been received. An instance occurs to our memory of an African Thrush which has three of these knobs; and the following remarks by Mr. Swinhoe also bear upon the question. In describing his beautiful new *Turdus albiceps* from Formosa, he observes:—"On the carpal edge of the wing a tubercle or wart is rather conspicuous. It occurs,

I find, though smaller, in the Formosan *Oreocincla* and in *Turdus daubias*, also in a still less degree in the *Garrulaces*, and probably in most other species of this group. It is, of course, an abortive wing-spur, which in *Turdus dactylopterus*, Bp., of Syria, appears to have acquired a full development."

The range of the Blackbird into North-eastern Africa is thus given by Captain Shelley, who writes:—"The Blackbird comes to Egypt in the winter, but is not common in the country. I have met with it on two occasions, once in the Delta and once near Benisooef at the end of March, when I saw a pair together."

Lastly, the European Blackbird is supposed to inhabit Cashmere and Afghanistan. Thus Dr. Leith Adams says:—"It is a common cage-bird in the towns of the Punjab, said to be imported from Afghanistan—not a native of the Western Himalayas, as far westward as Peshawur, but probably found on the Hindoo-Coosh chain." Lord Walden's collection contains a specimen of this bird procured in Cashmere by Dr. Jerdon, and we cannot believe that it is the same as the European species; unfortunately it is not quite adult, and, although blackish all over the rest of the body, it has the belly crossed with tawny and black bars. If indeed it is a young bird gaining the mature black plumage, it is evident that it cannot be the European species, which performs that change by a direct moult. The length of the wing, too, seems to show that it is a different bird; for it measures 5·8 inches. Ten specimens, chosen at random from among the series of European specimens now before us, have the wing measuring from 4·65–5·2 inches.

At the present day, even as it was in his own time, Macgillivray's account of the habits of the Blackbird seems to be the best; and we transcribe the greater part of it from his work on British birds:—

"In winter it frequents the neighbourhood of houses and towns, resorting to woods, hedges, and gardens, and generally keeping in the shelter of trees or bushes. At this season its food consists principally of snails, especially *Helix aspersa* and *H. nemoralis*, the shells of which it breaks by raising them in its bill, and dashing them against a stone or other hard surface. It also occasionally breaks them open by pecking against the spire, in which the shell is much thinner. Like many other birds, however, it has a great range of food. Thus, having opened five individuals, I found in the stomach of one a great quantity of seeds and husks of gramineæ, including wheat and oats; in that of another, coleopterous insects; in that of a third, coleoptera, and seeds of various kinds; in that of the fourth, mollusca, and fragments of shells; in that of the fifth, seeds, mollusca, and a few grains of gravel. Earthworms, larvæ, berries, and seeds of various kinds I have also observed in the stomachs of numerous individuals which I have opened.

"It is amusing to observe a Blackbird searching for food on the smooth green of a garden, which one may easily do from the window without being noticed. In December 1832 I watched one in order to note its motions. After looking quietly at a particular spot for some time, it hopped up, began to peck the ground with great energy, and after some exertion, succeeded in dragging out a worm of moderate size, which it immediately threw on the ground. It then pecked at the worm for nearly a minute, and, beginning at one end, separated by a sudden stroke a small portion, which it swallowed. In this manner it proceeded until it had devoured the whole, not swallowing at any time more than a small fragment. It then hopped about, looking now

and then attentively at a certain spot, and at length began to dig vehemently for another worm, which it soon procured. This was the first time that I had closely watched a Blackbird while searching for worms; but I have since had repeated opportunities of convincing myself that it always proceeds in the same manner, never swallowing an entire worm, unless it happen to be extremely small, and cutting the very large ones into a great number of pieces.

“ ‘Blackbirds with us,’ writes my friend Mr. Archibald Hepburn, of Whittingham, in East Lothian, ‘greedily devour slugs, worms, and different sorts of berries and other fruits. They seldom or never trust themselves free from the shelter of the hedge or bush; but I have seen Song-Thrushes feeding in the middle of a field nine acres in extent. They are also much wilder than the Thrushes. If you wish to shoot one in a hedge row, unless you succeed at once, he will lead you a wild-goose chase, and then fly off, wishing you better sport farther off. Blackbirds seldom mob a cat, unless when they have young. When gooseberries are in season, you may see them feeding from sunrise to sunset, except when they betake themselves to the pond to wash. In the winter they disperse over the country, feeding on the different wild fruits in the hedges, and on slugs and worms in the pastures. When hard-pressed for food during a snow-storm, they frequent the stack-yard. The female sits thirteen days, the male singing till the young are hatched, after which he is seldom heard till the labours of nidification again commence. On the 18th of October I heard a Blackbird sing, although in a very indistinct manner; but previously to this, the last time I heard either this species or the Thrush, was about the middle of July.’

“The sides of hedges and walls are favourite places of resort; for there it readily procures worms and snails. In hard weather it often eats the berries of the hawthorn, which it swallows whole, and betakes itself to the corn-yards, where it picks up seeds chiefly on the ground. When searching for food, it hops or leaps with great alacrity, keeping its tail a little raised, and its wings loose; and when perched on a tree, twig, or wall, it generally elevates its tail, unless disposed to doze, in which case it draws in its neck, ruffles its plumage, tucks up its wings, and allows the tail to droop. When disturbed, it flies off uttering a loud chuckling noise, which, although clear and shrill, reminds you of the chatter of the Magpie; and you may pursue it from one part of a hedge to another, until you obtain it; for it seldom shifts to a great distance. Although thus easily procured, it is yet decidedly shy, and in this respect differs greatly from the Song-Thrush, which imagines itself secure at a very short distance.

“The flight of the Blackbird over an open space is steady, without undulations, but along the hedges is wavering and fitful; and the bird suddenly darts into the place which it selects, and instantly settles. During the breeding-season its flight is peculiar; for then the female especially moves through the air as if by starts, performing a single flap, followed by a considerable interval, and then continuing its course. The Missel-Thrush, the Fieldfare, and the Redwing frequently take long flights, and are often seen advancing at the height of several hundred yards; but the Blackbird rarely ventures on a long excursion, but prefers skulking, as it were, among the hedges and trees. Compared with the Song-Thrush, it is a very lively bird; and it is amusing to observe one that has just alighted on a twig, and see how gracefully it bends forward, throws up its tail, jerking it at intervals, depresses and at intervals flaps its wings, and then perhaps flits to another branch, where it performs the same motions, or alights on the wall, hops along, suddenly stops, jerks its tail, flaps its wings, and then commences singing.

“Even in severe weather in winter, Blackbirds are not gregarious; and on no occasion have I seen more than three or four together, and that only for a few minutes. Although a male and a female may sometimes associate during that season, it is much more common to find them solitary. Nor does this species cherish the society of any other, though it may be seen in the vicinity of a Song-Thrush, a Hedge Chanter, or other small bird. While the Fieldfares and Redwings cover a field in search of food, the Blackbirds very seldom venture amongst them, but prefer the shelter of the fences.

“The female is less clamorous than the male, who, on being alarmed or irritated, especially in the breeding-season, emits a loud clear chuckling cry, in some degree approaching to the chatter of the Magpie, fluttering or flapping its wings, and bending its body forwards at the same time. This remarkable cry, variously modulated by different individuals, sometimes exhibits a slight resemblance to the cackle of a domestic hen after laying; but whether it be the same as that alluded to by a correspondent in the ‘Naturalist’ as similar to the crowing of a cock, and by the editor of that journal as resembling the notes of several varieties of that species, I am unable to determine, not having listened to the individuals mentioned by them. This much, however, I have observed, not as a singular circumstance, nor even as one common to a few individuals, but as exhibited at all seasons, at the period of breeding and in the middle of winter, and by very many birds of the species—that the male, on perching, whether on a tree or on the ground, but especially on the former, raises its tail, flutters, it might almost be said, flaps his wings, emits his chuckling cry, and continues balancing himself, or hops along, repeating the notes, which, should he be alarmed, or in any way excited, are sometimes raised and prolonged so that a person fond of tracing affinities and analogies, might naturally enough liken it to the crowing of a Cock.

“Few persons seek an opportunity of hearing the song of the Blackbird in the early morning before the first rays of the sun shoot across the eastern sky; but many listen to it with delight in the quiet evenings of spring and summer, when the other songsters, except the Thrush or the Nightingale, are mute, and when its mellow notes come swelling on the ear, shedding a benign influence on every heart not entirely hardened by a habitual disregard of nature. On the 1st of May, 1837, a Blackbird in the garden commenced his song at three in the morning; a fortnight after I heard one as early as half-past two; and in the middle of summer I have listened to it before going to bed, when the twilight peeped in between the shutters upon the untired student thus admonished of the propriety of intermitting his labours. The first morning song of the Blackbird is very singular, and altogether different from that of the evening, consisting of repetitions of the same unmusical strain, performed with a harsh screaming voice. It continues for a quarter of an hour or more, and is not again heard until towards sunrise, when it is renewed in a bolder, louder, and more joyous strain. In cold and cloudy weather, however, this twilight strain is seldom heard; for then the bird waits until it is full day before it commences its song. Although the Blackbird sings at all times of the day, it is more especially in the mornings and evenings that it pours forth its delightful melodies, which, simple as they are, I am unable to describe in a more effective manner than by characterizing them as loud, rich, mellow, and much surpassing in effect those of any other native bird, excepting the Nightingale, Song-Thrush, Blackcap, and Garden-Warbler. I have heard individuals singing most fervently in the midst

of a heavy thunder-storm, when the rain was falling thickly, and the lightning flashing at an alarming rate; and both this species and the Song-Thrush seem to regard the summer rains with pleasure. The season at which the Blackbird is in full song commences about the middle of February, and ends about the beginning of August; but in calm and especially warm weather, whether clear or cloudy, it may sometimes be heard in the winter and early spring months. Thus in the uncommonly mild winter of 1837 it was frequently heard in the south of Scotland in December, although the severe frost and snow which happened in January following entirely put an end to its mirth for weeks.

“It is not in the wild valley, flanked with birchen slopes, and stretching far away among the craggy hills, that the music of the Blackbird floats upon the evening breeze. There you may listen delighted to the gentle song of the Mavis; but here, in this plain, covered with corn-fields, and skirted with gardens, sit thee down on the green tuft by the gliding brook, and mark the little black speck stuck as it were upon the top twig of that tall poplar. It is a Blackbird; for now the sweet strain, loud, but mellowed by distance, comes upon the ear, inspiring pleasant thoughts, and banishing care and sorrow. The bird has evidently learned his part by long practice; for he sings sedately and in the full consciousness of superiority. Ceasing at intervals, he renews the strain, varying it so that, although you can trace an occasional repetition of notes, the staves are never precisely the same. You may sit an hour or longer, and yet the song will be continued; and in the neighbouring gardens many rival songsters will sometimes raise their voices at once, or delight you with alternate strains. And now, what is the purpose of all this melody? We can only conjecture that it is the expression of the perfect happiness which the creature is enjoying when, uncared by care, conscious of security, and aware of the presence of his mate, he instinctively pours forth his soul in joy and gratitude and love. He does not sing to amuse his mate, as many have supposed, for he often sings in winter, when he is not yet mated; nor does he sing to beguile his solitude, for now he is not solitary; but he sings because all his wants are satisfied, his whole frame glowing with health, and because his Maker has gifted him with the power of uttering sweet sounds.

“The Blackbird pairs in February or March, and about the middle of the latter month, or later in the season, according to the temperature or the progress of vegetation, begins to construct its nest, which it places in a bush of any kind—a hawthorn, a laurel, a holly, or a willow, for example, or among ivy, or honeysuckle, or even in a hole in a wall or rock. For the most part, however, it selects the lower part of a hedge, or a briar or bramble thicket, or the concealment of a fresh young fir or pine. The nest, which is bulky, is composed externally of stalks of grasses, supported or strengthened by some twigs or stems of herbaceous plants, and interwoven with mosses. This framework, coarsely intertwined, is lined with a thin layer of mud, within which is a more neatly arranged layer of fibrous roots, slender stalks of grasses, decayed leaves, and hypna. The interior is hemispherical, about four inches in breadth at the mouth, and three in depth. The nests, however, vary considerably as to the materials of which they are composed. In one before me, within a loose mass of grasses, roots, and twigs is a firm cup composed of blades and stems of soft grasses rudely interwoven and compacted with sandy mud, which has been applied in pellets, and having a thickness of a quarter of an inch. Within this is a shell of about the same thickness, composed of fine fibrous roots and slender grasses well interwoven,

especially at the mouth. The diameter within is four inches, the depth two and a half. In another, the mud cup is formed of fine light-brown earth, mixed with hypna, the inner cup of fine grasses and decayed holly leaves. Its dimensions are the same. The eggs are generally five, or from four to six, pale bluish green, freckled with pale umber, the markings closer towards the larger end, where they sometimes form an obscure ring. They differ in form from very broad to elongated oval, the longest being about an inch and two twelfths by ten twelfths, the shortest an inch and half a twelfth by ten twelfths and a quarter. Generally, however, they are of a much longer form than those of the Song-Thrush. Two broods are commonly reared, the first being abroad towards the end of May, the second by the middle of July. It appears, however, that sometimes a greater number of broods is reared. Mr. Blyth states in the 'Naturalist,' vol. iii. p. 152, that a pair built four successive nests in 1837 upon the island in St. James's Park, and succeeded in rearing seventeen young ones, the first three broods consisting of five each, the last of two only; and that another pair which he knew of raised three broods in a garden near his residence.

"Mr. Weir has furnished me with an account of a series of observations having reference to the feeding of young birds while yet unfledged. Those which refer to the present species are here given:—

"On Saturday morning the 10th of June 1837, at half-past two o'clock, I went into a house made of the branches of trees to watch the Blackbirds whilst they were feeding their brood. It was within nine feet of their nest, which was built in the hole of an old wall. It is a situation for which they and the Thrushes seem to have had a strong predilection; for it has been occupied by one or other of them for a number of years successively. The morning was so cold, with a heavy rain and a strong breeze from the east, that I was obliged to wrap myself up in a warm cloak and a mackintosh waterproof.

"At a quarter past three o'clock in the morning they began to feed their young, which were four in number. From that time until four o'clock the male fed them only once, and sang almost incessantly, whilst the female fed them six times. From four to five o'clock the male fed them six, and the female three times; from five to six o'clock the male fed them four, and the female five times; from six to seven o'clock the male fed them three, and the female five times; and from seven to eight o'clock the male fed them three times. For the last four hours he sang most delightfully, except when he was feeding his tender offspring. As he had induced one of them to fly out after him, I was under the necessity of fixing it into its nest, and this caused some interruption to their feeding. From eight to nine o'clock the male fed them six, and the female seven times; and from nine to ten o'clock the male fed them four, and the female three times. In keeping both the inside and outside of their nest clean they are very particular. A dropping of one of the young birds having fallen to the ground, the male immediately carried it off to some distance, in order, no doubt, to prevent suspicion. From ten to eleven o'clock the male fed them three, and the female two times; from eleven to twelve o'clock the male fed them two, and the female three times; from twelve to one o'clock the male fed them two, and the female four times; and from one to two o'clock the male fed them twice, and the female thrice.

"Although the hut in which I sat was very closely covered, a Wren having alighted on the ground in pursuit of a fly, no sooner observed one of my legs in motion, than it set up a cry of

alarm, on which, in the course of a few seconds, all the birds in the neighbourhood collected to see what was the cause of it. The Blackbirds hopped round about the house again and again, made every effort to peep into the interior, and even alighted on the top of it, within a few inches of my head; but they at length gave up the attempt.

“From two to three o'clock the female fed them twice; and from three to four o'clock the male fed them three, and the female four times.

“That some of the notes of birds are a language which conveys a direct meaning, may, I presume, be inferred from the following interesting occurrence, which took place at half-past three o'clock, an occurrence which I witnessed with the most anxious curiosity, and which I could scarcely have believed had I not seen it. The female having brought a large worm, I am sure more than four inches in length, put it into the mouth of one of the young, and then flew away. Upon her return, having perceived that it was sticking in its throat, she set up the moan of distress. To her assistance her cry immediately brought her partner, who likewise seemed to be aware of the consequences. To force it down they made several efforts, but in this they were unsuccessful. Strange to tell, the male at length discovered the cause of the catastrophe. That part of the worm which by being entangled among the feathers of the breast had been prevented from going down, he carefully disengaged, and held it up with his bill, until, after the most unusual efforts, the young bird at length swallowed it. But so much exhausted was it that it remained nearly three hours without moving, and with its eyes shut. The male, having alighted upon a tree a few yards from his nest, poured forth some of his most enchanting notes, a song of rejoicing, no doubt, for the narrow escape from death which one of his family had just made.

“From four to five o'clock the male fed them three, and the female four times; from five to six o'clock the female fed them only twice, and from six to seven o'clock she fed them three times. In the evening the male was so much engaged in singing, that he left the charge of his family almost entirely to his tender-hearted spouse.

“From seven to eight o'clock the male fed them only once, and the female six times; and from eight to twenty minutes before nine o'clock, when they ceased from their mutual labours, the male fed them once, and the female seven times. When I left my retreat, to repair to my more comfortable abode, the male was pouring forth his most charming melody.

“Thus, in the course of a single day, the male fed the young forty-four, and the female fed them sixty-nine times.

“Before these birds fed their young, they always alighted upon a tree, and looked around them for a few seconds. They sometimes brought in a quantity of worms, and fed the whole of their brood alternately; at other times they carried in only one worm, and gave it to one of them. The worms were very large, owing, no doubt, to some heavy showers of rain which had fallen on the previous day. This may perhaps be the reason why they fed them so seldom, compared with the number of times that the Thrushes, which I watched a few days before, gave food to their brood. The weather was then very dry, and the worms were considerably smaller.

“The young birds often trimmed their feathers, and stretched out their wings; they also appeared to sleep now and then. With the note of alarm which the feathered tribes set up on the discovery of their enemies, all the different species of the little birds seem to be most intimately acquainted; for no sooner did a beast or a bird of prey make its appearance, than

they seemed to be anxiously concerned about the safety of their family. From tree to tree they usually hopped, uttering their doleful lamentations. At one time the Blackbirds were in an unusual state of excitement and terror, and were attended by crowds of their woodland friends. A man and a boy, who were working in my garden, having heard the noise, ran to see what was the cause of it. Upon looking into some branches lying on the ground, they observed a large weasel stealing slyly along in pursuit of its prey. When they approached it, instead of running off as they expected it to do, it climbed to the top of a larch tree, where it remained until my Pointer was brought, when they shook it down, and it made its escape. It is astonishing how very soon the young know this intimation of fear; for I observed that no sooner did the old ones announce it, than they cowered in their nest, and appeared to be in a state of great uneasiness.

“‘During the whole day, except in two or three instances, the Blackbirds *swallowed all the droppings of their brood.*’

“The flesh of the Blackbird is excellent, as, indeed, is that of all our other species, although, I believe, very seldom used as an article of food. The good people who unhesitatingly feed on innocent Lambs, gentle Doves, and confiding Pullets, look with a kind of abhorrence on the cruel slaughterer of Blackbirds. This, however, it is obvious, is mere selfishness. The bird amuses them with its song, and they are displeased with its destroyer. Yet, when it has the audacity to appropriate a few cherries, gooseberries, pears, or other fruit, it is very much in the way of receiving some grains of No. 5, from those who would hesitate to shoot it, unless in anger. Its fondness of fruit is scarcely counterbalanced by its helping to clear the gardens of snails and worms; but it amply repays all damage by its song, which, in some respects, is unrivalled. The period at which it is in prime condition as an article of food, is from the beginning of October to the end of February, unless a snow-storm or hard frost should occur; and even then, it retains its condition much longer than the other Thrushes, excepting the common species, for it still finds a supply of snails under the hedges. The Blackbird is frequently kept in cages, where it sings with nearly as much effect, even in the midst of a crowded city, as in its wild haunts, although the natural associations of cultivated scenery and gentle emotions are then entirely lost. Very often, however, it is taught to whistle a tune of some kind, and is thus rendered an object of admiration to those who have little relish for nature, unless they can distort her so as to suit their depraved tastes. The young are easily reared when taken from the nest.”

Mr. Robson very kindly sends us a note on its habits in Turkey:—“Great numbers of Blackbirds are shot in the winter by sportsmen for food. They arrive in the middle of October, and take up their abode for the winter in damp valleys, where thickets abound. They feed much on the berries of night-shade, mountain-ash, and ivy, also on worms, caterpillars, larvæ of insects, &c. In spring they retire to the woods, and also affect places where damp thickets are scattered over the sides of mountains or in the valleys, but are never seen in summer in open places or on bare mountain-sides. They are restless, timid birds, and are never found far from thickets, into which they dive at the first symptom of alarm. They are partial to breeding in the forests of dwarf oak trees, where in summer there is an abundance of caterpillars wherewith to feed their young. The nests and eggs are most abundant in the early part of June, those laid earlier being

often sucked by snakes and lizards, with which the country abounds. The nest of this species in Turkey is sometimes found with feathers inside, but is mostly lined with dry grasses."

Concerning the Blackbird in Denmark our friend Mr. A. Benzon writes to us as follows:—" *Solsort* is the common Danish name of this bird, and *Sortdrossel* is but seldom used. The nest is constructed outside of small twigs and coarse bents, worked together with clay or earth, and inside lined with fine grass-straws or roots, more seldom with moss. The outside diameter is about 120 millims. and the height 85 millims., and the inside diameter about 70 millims. with a depth of 50 millims. It is usually placed on a low bush or the side of a tree or on a stump, sometimes in low fir trees, and such places, seldom higher than about a metre above the ground, though sometimes so low that the foundation touches the latter. It has two or three broods in the year, and generally lays four or five, seldom six, eggs; and sometimes the last sitting consists of only three. I have taken the first eggs on the 28th of April, and the last on the 10th of July; but I have known them taken both rather earlier and later. The eggs are generally bluish green, covered all over with greyish-brown spots, but often with larger brownish-yellow spots, which collect at the larger end; in shape they are oval and but slightly tapering. Both in colour and size they are, however, subject to considerable variation. I think the average size is about 30.5 by 22.5 millims. This, like all other Thrushes, is called *Kramsfugl*, and during migration is snared, but is the least numerous, excepting the Ring-Ouzel (*Turdus torquatus*), of those caught. It is particularly numerous in parts of the woods where berries are abundant, or near gardens, where, during the fruit-season, it does some harm to certain sorts of fruit."

As will be seen above, Macgillivray states that the present species is not gregarious; but they roost in company, as the following note, sent us by our excellent coadjutor Mr. J. H. Gurney, jun., will show:—"On his land at Ulceby, in North Lincolnshire, Mr. J. Cordeaux showed me a plantation of young spruce and larch of about two acres. In the daytime there were no Blackbirds here, but on a winter's afternoon they thronged to it with others of the Thrush tribe. In the 'Zoologist' (p. 9407) he relates that on the 28th of November, 1864, he counted 138 enter the plantation between 3.30 p.m. and 4.15, which was exclusive of many more which came in on the other side. In 1870 he repeated the experiment (Zool. p. 2474), but only 52 came in, as part of the underwood had been cleared out. In the autumn incredible numbers resort to the turnip-fields, it has been said, to feed on slugs."

The following little notice by Mr. Harry Blake-Knox is worthy of record. In his "Ornithological Notes from the County Dublin" (Zool. s. s. p. 684), he writes on the migration of the Blackbird:—"There have been many inquiries in the 'Zoologist' as to what becomes of the old Robins in the summer; but I would put another question, What becomes of Blackbirds, old and young, in the same season? I am sure that many must have noticed that during the spring they breed in numbers, and rear quantities of young; but from June very few are to be seen, except those that frequent gardens: I speak of Ireland generally. I know that in September and October miles of hedges may be traversed, and not one seen; but in November, when the haws are ripe, every hedge and garden is full of them, old and young. Nowhere can we go country-ways but we hear their cheery cries; and I know persons who have at this season shot several dozens in a day for making pies. They are capital eating at this time of the year, if treated like game, kept till high, and served up underdone. In a few weeks the bulk of the haws are

devoured, and the body of the Blackbirds disappear with them. I attribute this to the tide of emigration; but, still, where do our breeding-birds and their young go during summer? My theory would be, and take it for what it is worth, that the birds who have successfully reared their young in time, who have not been delayed by robbery, and many of the young, migrate southwards after the breeding-season, to meet the early fruit, and that they gradually advance northwards again in a body, following the ripening haws, and then winter as best they can in their old spring haunts. Constant watching has confirmed my belief in the migratory part of this theory."

Mr. J. H. Gurney, jun., has drawn our attention to the following notes on the food of Blackbirds by Florent Prevost, from observations made in France:—

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| January | Seeds, spiders, chrysalids. |
| February | The same. |
| March | Worms, buds of trees, grubs. |
| April | Insects, worms, grubs. |
| May | Cockchafers, worms. |
| June | Worms, grubs, fruit. |
| July | All sorts of insects, worms, and fruit. |
| August | The same. |
| September | The same. |
| October | Worms, chrysalids, grubs of butterflies. |
| November | Seeds, corn, and chrysalids. |
| December | The same." |

Mr. Harting, in his 'Ornithology of Shakespeare,' gives two instances of the mention of the Blackbird by the great poet. He says:—"The attractiveness of the Blackbird was not overlooked by Shakespeare, who has mentioned him in one of his songs:—

" 'The Ouzel-cock, so black of hue,
With orange-tawny bill.'

Midsummer Night's Dream, Act iii. sc. 1.

When Justice Shallow inquires of Justice Silence, 'And how doth my Cousin?' he is answered—

" 'Alas! a Black Ouzel, Cousin Shallow'

(King Henry IV., Part 2, Act iii. sc. 2)—

an expression which was probably equivalent to the modern phrase, 'a black sheep.'" Mr. G. Dawson Rowley has also very kindly drawn our attention to a little note on the Blackbird, which occurs in Mr. J. C. Jeaffreson's 'Book about the Clergy' (ii. p. 296). "In his life of Cranmer, Strype says that in the year 1541 the Archbishop, with the consent of the other Archbishops and most of the Bishops and divers other Deans and Archdeacons, made a constitution for moderating the fare of their tables, viz. that of the greater fish or fowl, such as cranes, swans, turkeys, haddocks, pike, tench, there should be but one in a dish; of lesser sorts than they, as capons, pheasants, conies, woodcocks, but two; of lesser sorts still, as of partridges, an archbishop three, a bishop and other degrees under him two. The number of the Blackbirds was also stinted to six at an archbishop's table and to four for a bishop; but for little birds, as larks,

snipes, &c., the number was not to exceed twelve." Mr. Rowley adds:—"The old song gives twenty-four Blackbirds in a royal pie."

Hewitson's account of the nesting of the Blackbird and the figures of its eggs are very good, and we give the former in extenso:—"In its time of incubation, and in the position of its nest, the Blackbird differs very slightly from the Thrush. The nest, which is sometimes very much exposed, may be met with in thorn hedges, or in single bushes, in evergreens, occasionally on the top of a naked stake-fence, on the summit of a wall, or in a heap of dead sticks. I have seen it within a few inches of the ground, on the stump of a felled tree. It is formed chiefly of grass, with a few dry sticks, roots, and dead leaves, cemented together with mud, which it uses in a much greater quantity than the Thrush, and is then lined with fine dry grass. The eggs, which are four or five in number, vary much. Figure 1 represents a common variety, although not the most typical I could have chosen; I have figured it to make the drawings—at the same time that they represent each species—illustrative of the whole genus: figure 2, a variety, much resembling eggs of the Ring-Ouzel: a variety similar to the last, except that the ground-colour is lighter and the spots smaller, is not unfrequent. I have a beautiful egg of this species, of a clear spotless light blue, with the whole of the larger end suffused with reddish brown. The Rev. A. C. Smith has kindly sent me a very beautiful egg, such as I have never seen before; it is of a clear green-blue, with numerous minute spots and some large blotches of delicate light red-brown and purple, with two or three spots of black at the larger end. My friend Mr. Henry Doubleday found several nests of the Blackbird in Epping Forest, the eggs of which were of the fine blue of the Thrush, and without spot. The eggs of the Blackbird are frequently of an oval form, the smaller end being rounded and obtuse, a character which I have not noticed in the allied species." The mildness of the season has much to do with the early breeding of the species, for Mr. J. H. Gurney, jun., tells us that he knew of a nest at Southrepps, in Norfolk, on the 5th of February, 1872; and the following extract from Thompson's 'Birds of Ireland' bears witness to the fact:—"The Blackbird builds early in the north of Ireland, often commencing about the middle of March and occasionally sooner. In the unusually early spring of 1846, the following occurred in the neighbourhood of Belfast. On the 22nd of February a nest with three eggs was seen; on the 1st of April, the young made their appearance in a nest at the Falls; on the 14th of this month a nest containing three young birds some time 'out' was discovered at Cromoe House. Three broods were produced in the nest, the last of which made their appearance on the 3rd of July. The three broods followed immediately after each other, and were all seen by Mr. J. R. Garrett, to whom the nest itself did not seem in the least degree altered." Our friend Dr. E. Rey, of Halle, tells us that he found fresh eggs of this bird in Germany from the 16th of April to the 22nd of June, and in one instance on the 8th of July. "The number of eggs is generally five, seldom six; but in other localities, Thuringia for instance, they more often lay the larger number. Some pairs which may have wintered here, lay much earlier than the rest; and I found fledged young on the 26th of April, 1868, whereas most pairs had then scarcely finished building their nests." He further informs us that forty eggs taken in Germany average 28·3 by 20·8, the largest measuring 32·0 by 22·5, and the smallest 24·0 by 19·0 millimetres respectively.

In a letter dated April 3rd, 1872, Mr. J. H. Gurney, jun., writes to us:—"I lost a nest of young Blackbirds on Monday last by rats; at least I suspect them of being the cause, as it was

on the ground. My cousin, Mr. H. E. Buxton, when living at Mussel, near Norwich, had all his laurels nipped by the frost, and the next season all the Blackbirds nested on the ground."

The following remarks on "a prolific pair of Blackbirds" was furnished by Mr. George Gordon, of Elgin, to the 'Zoologist' for 1848 (p. 2297):—"The following notice regarding the nidification &c. of a single pair of Blackbirds, during the bygone breeding-season, may interest some of your readers, and show that this species may multiply in a greater ratio than many are aware of. April 27th, 1848: The young leave the first nest, built in a clump of ivy on the top of a wall, four in number, one egg having been abstracted from the nest before incubation. April 29th: Two eggs in the second nest, detected in a bushy yew tree. May 16th: The cock observed feeding the five young, newly hatched, on the second nest. May 24th: Hen Blackbird seen making her third nest in an apple-tree nailed to a wall. May 29th: Two eggs in the third nest, and the brood leave the second nest and perch on the trees. June 10th: Third nest forsaken; of the eggs, which were five in number, two remain in the nest, part of the others on the ground below the nest, and part of them found on a walk some twenty yards from it. June 14th: Blackbird's fourth nest begun in a birch hedge. June 23rd: Of the five eggs laid in the fourth nest only two remain; another found on the ground below it: it seems to have been pillaged by some bird in the same way as the third nest. June 26th: Fifth and last nest of Blackbird partially formed in a vine trained on the end of a house. July 18th: Blackbirds in the fifth nest half grown; they leave the nest on the 26th. Thus a single pair of birds had twenty-five eggs, and reared fourteen young in one season. The garden and shrubbery are so small in extent that had there been more than one pair about them they would at once have been detected; and such were frequently looked for, but in vain. The dates of the different stages observed also tend to show that one pair may have constructed and managed the whole nests with their contents, eggs being never found in more than one nest at the same time, unless when one had been forsaken. From a careful examination of the ground around the third nest it is inferred that it must have been some winged creature that disturbed the female on her eggs and destroyed some of them. Was this the male?"

In our account of the Song-Thrush, we have already given an instance, on the authority of Count Salvadori, of a hybrid between that bird and the present species. There is one in the British Museum, presented by Mr. A. D. Bartlett. Macgillivray's work also contains a record of a similar occurrence from the pen of his able correspondent Mr. Weir:—"That birds in a state of confinement may be induced, by the solicitations of love, to form alliances with other species of the same genus, or such as resemble them closely in size and habits, when they have not an opportunity of making a choice, is not wonderful; but that they should do so when left to the freedom of their will is rather strange, and what seldom occurs. Mr. Russell, of Moss-side, my next neighbouring proprietor, and his brother informed me that about the conclusion of the winter of 1836 a male Blackbird and a female Thrush fed occasionally together within a short distance of their house. At the commencement of spring their attachment to each other appeared more decided; they carried on a course of regular flirtation, which eventually ended in matrimony."

In the preparation of the above article we have examined the following specimens:—

E Mus. Sharpe and Dresser.

a, b, c, d. Near London, May 6th and 20th, and June 1st, 1870 (*C. Davy*). *e.* England (*Leadbeater*).
f. Aboyne, N. B. (*J. Waters*). *g, h,* ♂, ♀. Hareskov, Seeland, October 4th, 1870 (*A. Benzon*). *i,* ♂.
 Wermland, winter, 1871. *j,* ♀. Volga (*Moeschler*).

E Mus. H. E. Dresser.

a, juv. West Drayton, Middlesex, June 20th, 1869 (*R. Paraman*). *b,* ♀. R. Baskan, July 1841 (*Dr. Renard*).

E Mus. Lord Walden.

a, ♀. West Drayton, Middlesex, June 25th, 1869 (*R. Paraman*). *b, c,* ♂, ♀. Cookham, Berks, December 1867 and March 1868 (*W. Briggs*).

E Mus. Salvin and Godman.

a, b, ♂ and *juv.* St. Michael's, Azores, March and July 1865 (*F. Godman*). *c, d,* ♂. Fayal, Azores, February and June 1865 (*F. Godman*). *e,* ♂. Flores, Azores, May 1865 (*F. Godman*).

E Mus. G. E. Shelley.

a, b, c, d, ♂, ♀. Avington, Hampshire (*G. E. S.*).

E Mus. W. Schlüter.

a. Macedonia, October 19th, 1869 (*Dr. Krüper*). *b, c,* ♂. Galicia, April 1869 (*W. S.*). *d,* ♂. Pommerania, March 24th, 1868 (*W. S.*). *e,* ♂. Mähren (*W. S.*).

E Mus. J. H. Gurney, jun.

a, b, juv. Hampstead (*Burton*). *c.* Newcastle. *d, e, f.* Seaton, Durham, March 26th and April 3rd, 1866 (*J. H. G.*). *g, h, i, j.* Greatham, Durham, February 23rd, March 23rd and 30th, 1866 (*J. H. G.*). *k,* ♀. Catton, January 6th, 1866 (*J. H. G.*). *l.* Somerset (*J. H. G.*). *m.* Plymouth, June 1869 (*J. Gatcombe*).

E Mus. H. J. Elwes.

a, ♂. Sweden (*Wheelwright*).

E Mus. Howard Saunders.

a, ♂. Sierra Nevada, April 1871 (*H. S.*).

E Mus. H. B. Tristram.

a, ♂. Norwich (*J. H. Gurney*). *b,* ♂. Castle Eden (*H. B. T.*). *c,* ♀. City of Durham, December 1864 (*H. B. T.*). *d,* ♀. Jericho, January 2nd, 1864 (*H. B. T.*). *e,* ♂. Jebel Ajlun, Bashan, March 14th, 1864 (*H. B. T.*).

E Mus. T. E. Buckley.

a, ♀. Macedonia, March 1869 (*T. E. B.*).



RING - OUZEL.
TURDUS TORQUATUS



34

RING OUZEL.

TURDUS TORQUATUS

TURDUS TORQUATUS.

(RING-OUZEL.)

Turdus torquatus, Linn. Syst. Nat. i. p. 296 (1766).*Merula torquata*, Boie, Isis, 1822, p. 552.*Sylvia torquata*, Savi, Orn. Tosc. i. p. 206 (1827).*Copsichus torquatus*, Kaup, Natürl. Syst. p. 157 (1829).*Merula montana*, Brehm, Vög. Deutschl. p. 375 (1831).*Merula collaris*, id. op. cit. p. 376 (1831).*Merula alpestris*, id. op. cit. p. 377 (1831).*Merula vociferans*, id. Naumannia, 1855, p. 281.*Merula maculata*, id. tom. cit. p. 281.

Ring-Ouzel, Tor-Ouzel, Rock-Starling, Rock-Ouzel, Ring-Thrush, Mountain and Michaelmas Blackbird, English; *Dubh chraige*, Gaelic (Gray); *Merle à plastron*, French; *Merlo col petto bianco*, Italian; *Chirlo*, Spanish; *Merolo de peito branco*, Portuguese; *Malvitz tas-sidra baida*, Maltese (C. A. Wright); *Ringamsel, Schneeamsel*, German; *Dominé*, Dutch; *Ringtrast*, Swedish; *Ringtrost*, Norwegian; *Kaulusrastas*, Finnish; *Drozd bielozobyi*, Russian; *Drozd obrozny*, Polish.

Figuræ notabiles.

Montb. Pl. Enl. 516, 182; Naum. Vög. Deutschl. Taf. 70; Yarr. Brit. B. i. p. 206; Gould, B. of Eur. ii. pl. 73; Kjærb. Orn. Dan. pl. xvi. fig. 2, and Suppl. 6. fig. 3; Schl. Vog. Nederl. pl. 105; Gould, B. of Gr. Brit. pt. xii.; Sundev. Sv. Fogl. pl. xi. figs. 6, 7; Gray, B. West of Scotl. p. 79.

♂ *æstiv.* nigricanti-brunneus: tectricibus alarum et remigibus, plumis etiam quibusdam pectoris inferioris obsoletè albido marginatis: torque pectorali niveo: rostro aurantiaco: pedibus corneis.

♂ *hiem.* similis ptilosi æstivæ, sed obscurior: notæi plumis brunnescente marginatis, et corporis subtùs plumis cano limbatis: torque pectorali vix brunneo lavato.

♀ *æstiv.* ex chocolatino brunnea, facie laterali et colli lateribus concoloribus: tectricibus alarum et remigibus extùs sordidè albo marginatis: subtùs saturatè chocolatina, gutturis et pectoris plumis plus minusve distinctè albido marginatis: torque pectorali sordidè albo, plumis brunneo marginatis: pedibus flavicanti-brunneis: rostro flavo, culmine et mandibulâ versus apicem corneis.

♀ *hiem.* obscurior, notæi plumis fulvescenti-olivaceo marginatis: corporis subtùs plumis omnibus albicante marginatis: torque pectorali vix distincto, plumis obscurè albido marginatis.

Juv. fuliginoso-brunneus, dorsi plumis cum scapularibus et tectricibus alarum minimis lineâ fulvâ medianâ striatis: tectricibus majoribus brunneis, extùs pallidè fulvo marginatis: remigibus et rectricibus saturatè

brunneis, angustè fulvescente marginatis : regione auriculari brunneâ indistinctè fulvo lineatâ : gutture medio fulvo : genis cum colli lateribus et corpore reliquo subtùs nigricantibus, ubique fulvescente vel albido transversim fasciatis : subalaribus et subcaudalibus nigricantibus, medialiter fulvo lineatis.

Nestling. Covered down the crown and centre of the back with olive-brown feathers, with tufts of fulvous down on the sides of the head, lowest scapulars, and lower part of the back and rump ; a few of the feathers of the scapulars and middle of the back narrowly lined down the centre with buff, which is much more apparent on the wing-coverts, being very broad and distinct on the lesser coverts, the greater ones being margined with buff at the tip ; all the sides of the body are more or less bare, with a patch of feathers growing on the sides of the lower back and rump, brown in colour, mottled with transverse bars of buff ; on the under surface, the sides of the neck, a patch on the chest, and the flanks are bare ; the tiny feathers on the throat are buff, those on the breast blackish, and those on the belly brown, crossed with bars of fulvous.

The very interesting specimen described above is contained in the collection of Messrs. Salvin and Godman, and was procured in South Norway on the 12th of July, 1866, by Mr. J. Baker. These gentlemen have a very good series of young birds in the different stages of nestling plumage ; and from one of their specimens we proceed to describe the next stage, which is that of a young bird able to fly.

Young on leaving the nest. Above dark brown, with dull and almost obsolete edgings of ochreous brown on the head and upper part of the back, these margins being of a paler and more decided ochre on the lower back and rump ; lesser and median wing-coverts edged with ochreous buff, the greater coverts externally margined with hoary white, shading into buff towards the tip ; quills dark brown, the outer margin of the primaries hoary white, those of the inner secondaries tinged with buff ; tail blackish brown, the feathers pointed at the tips ; sides of the face dark brown, washed with ochreous brown like the top of the head, the cheeks slightly varied with pale fulvous ; throat fulvous, longitudinally marked with dark brown ; breast dark brown, some of the feathers narrowly margined with buff, causing a slight variation in the plumage ; rest of the under surface of the body dark brown, mottled all over with spots of whitish and buff margins to the feathers ; under tail-coverts dark brown, with a broad shaft-stripe and tip of whitish on each feather ; under wing-coverts greyish, mottled with dark brown ; bill horn-brown, with yellow skin at the gape ; legs pale fleshy brown.

Obs. The young Ring-Ouzels seem to vary very much, especially with regard to the buff streaks down the centre of the dorsal feathers, characteristic of young Thrushes. In some of the young specimens belonging to Messrs. Salvin and Godman they have quite disappeared on the back, and on the wing-coverts they are a little more than a triangular spot at the tip of each feather. In the specimen of the young bird figured by us, and for which we are indebted to our friend Mr. Henry Seebohm, of Sheffield, it will be noticed that these shaft-stripes are very distinct ; yet the bird is, if any thing, older than any of the Norwegian examples above referred to.

We have received from Herr W. Schlüter, of Halle, a naturalist to whose ready assistance we owe the opportunities of describing many a rare bird, a young female of the Ring-Ouzel, evidently in its first winter plumage, of which we add a full description, as we cannot find any notice of this curious livery in any work we have examined.

Young Female in first winter. Above pale chocolate-brown, the feathers of the upper surface edged with dull yellowish olive, these margins being plainer and more distinct on the rump and upper tail-coverts ; forehead and over the eye fulvous brown ; ear-coverts uniform with the back of the head, distinctly washed with the same olive-colour ; wing-coverts exactly like the back, the least ones margined in the same manner, the median coverts tipped with buffy white, and the greater coverts very distinctly

and broadly margined with the same tint; quills brown, externally margined with buffy white, which causes a shade of this colour to pervade the whole of the outer surface of the wing; tail very dark brown, with reddish-brown shafts, the feathers pointed at the tips; under surface of the body chocolate-brown, the whole of the feathers so broadly margined with whitish that the ground-colour of the plumage is scarcely perceptible; the pectoral gorget very obscurely indicated, dull white in colour, with a brownish shade towards the end of each feather, and the usual terminal margin of yellowish white; the edgings to the throat-feathers, as well as the flanks, tinged with yellowish; under tail-coverts longitudinally blotched with brown; under wing-coverts creamy white, with a narrow longitudinal indication of brown on some of the feathers; legs brown, the fore part of the tarsus yellowish; bill dark horn-brown. Total length 10·5 inches, culmen 1·0, wing 5·4, tail 4·3, tarsus 1·35.

Adult Female in breeding-plumage. Above chocolate-brown, the forehead slightly paler, the ear-coverts and sides of the neck uniform with the rest of the upper plumage; wing-coverts and wing itself brown, with obsolete greyish-white edgings to the outer webs of the feathers; tail entirely deep brown, with reddish-brown shafts to the feathers; under surface of the body deep chocolate-brown, the chin and most of the throat-feathers edged with whitish, and most of the breast- and belly-feathers exhibiting remains of whitish margins; pectoral gorget dull white, shaded with brown; under tail-coverts entirely brown, with whitish shaft-stripes, and a central streak of white along each feather, as well as a narrow whitish edging; under wing-coverts whitish, with brown mottlings occupying the centre of each feather; feet yellowish brown; bill yellow, the base of the upper and the tips of both mandibles inclining to horn-brown. Total length 10·3 inches, culmen 1·0, wing 5·2, tail 4·5, tarsus 1·25.

Obs. The difference in length of tarsus between this old bird and the younger one measured above is really as great as $\frac{1}{10}$ inch, and is a noteworthy fact, as showing that, like other Thrushes, the Ring-Ouzel varies much in size. The greater length of tarsus in the young bird may perhaps arise from its having been mounted, and therefore not in a natural state; and the greater length of wing we account for by the fact of its being clean moulted, while the old female has the quills somewhat worn by the process of incubation.

Our description of the adult bird is taken from a specimen given to us by Professor Sundevall, and it bears the date of the 2nd of June, 1857. The female is not so strongly marked as the male, and never gets the pure white pectoral gorget, this part being always shaded with brown; she likewise appears never to lose entirely the whitish edgings on the throat or on the breast, and, even in the full breeding-season, does not have a pure yellow beak.

Adult Female in winter plumage. Similar to the summer dress, but much duller, all the feathers of the upper surface being obscurely edged with dull olive-brown, and those of the under surface with greyish white; the pectoral gorget is scarcely visible, being obscured by the edgings of dull white to every feather.

Adult Male in breeding-plumage. Upper surface of the body entirely blackish brown, the under surface of the body of the same colour, but exhibiting on the centre of the breast some faint traces of the light margins of the winter plumage; pectoral gorget snow-white; wing brown, with a pale whitish edging to the greater coverts and outer web of the quills; tail darker brown, with a very faint narrow margin of whitish to the outer feather; under tail-coverts margined with an obsolete white edging, the shafts white; under wing-coverts brown, with a white edging to the axillary plumes, broader on all the other coverts; under surface of the wing silky white; feet horn-brown; bill orange. Total length 10 inches, culmen 1·0, wing 5·7, tail 4·4, tarsus 1·3.

Adult Male in winter. Only differs from the summer plumage in having brownish edgings to the feathers

of the upper surface, and broad greyish-white margins to all the wing-feathers and those of the throat, breast, and belly; the pectoral gorget is a little duller white, the feathers being shaded with brownish.

Obs. The Ring-Ouzel, though resembling the Blackbird in general form and appearance, never becomes of so deep a black colour as that species, and may always be recognized by its white pectoral gorget. In the female this is never so distinct; and it seems to be easily recognizable by this peculiarity at all ages. Like the Blackbird, the present species often exhibits white feathers on the head and face.

Explanation of the Plates. In our first Plate we figure an adult male and female in breeding-plumage, with a young nestling. All these specimens are in our own collection, the male being sent from Norway by Mr. Robert Collett, the female given us by Professor Sundevall, and for the nestling we are indebted to Mr. Henry Seebohm, of Sheffield. In the second Plate we give representations of an adult male and a young female, both in winter plumage, the latter being from Schleswig, the former sent to us by Mr. Robson, who procured it at Belgrade, in Turkey.

THE present species possesses nearly the same range as the Blackbird in Europe, but breeds further to the northward than its congener. Like the last-named bird it does not appear to extend beyond the Ural.

In the British Islands it is a well-known favourite, but frequents only such moorland or rocky situations as are suitable to its habits. Of its manners and economy we have given a full history below, from the materials furnished to us by many kind friends. Yarrell gives a very good account of its distribution in England:—"The Ring-Ouzel arrives in this country from the south in the month of April, and appears to prefer the extreme western and northern portions of these islands, visiting the wilder rocky and mountainous districts generally. They breed, it is said, on Dartmoor every year; and Mr. Eyton has noticed that they are by no means rare birds in Wales, particularly on the Berwyn chain of mountains near Corwen." He then gives a list of the English counties in which it is supposed to breed; but on this point we quote later authors, the first of whom is Mr. Rodd with regard to its occurrence in Cornwall. It is stated by him to be a "summer visitant; rare, but sometimes seen on the wild open country about Zennor, Towednack, &c.; Carn Galra, in Mowah, on our north coast, is a locality exactly congenial to the habits of this bird, where it has been seen. More common on the eastern moors, where they breed. The young, scarcely fledged, have been observed and taken on the moors and tors near North Hill, viz. Hawk's Tor, Kilmar," &c. In Devonshire, Mr. J. Brooking Rowe states that it breeds on the moors; and it is also met with during migration, for Yarrell writes:—"The Ring-Ouzel is not unfrequently seen in flocks of twenty or thirty about the end of October along the line of our southern coast, when preparing for their departure. To the Rev. Robert Holdsworth, of Brixham, I am indebted for a series of letters on the Natural History of Birds and Fishes in Devonshire. From him I learn that flocks of Ring-Ouzels appear in October, for about a fortnight, near Berry Head, the Bolt headland, and the Start Point, and are then seen no more that year. Further to the eastward, at the island of Portland, where these birds assemble, they are called Michaelmas Blackbirds; and the Isle of Purbeck is another starting-place. White of Selborne saw them frequently when on their route in Hampshire and Sussex."

Mr. A. G. More states that "the nest has also been found occasionally in the Isle of Wight, Kent, Suffolk, Norfolk, Warwick, and Leicester." Further information as to the migrations and

nesting of the Ring-Ouzel is to be found in the many excellent local works on birds which have been published during the last few years. In the county of Middlesex, Mr. Harting says, it is a passing visitant, appearing in spring and autumn. He says:—"I have three specimens of this bird in my collection, all obtained in the neighbourhood of Kingsbury; and I have seen others that were killed at Kilburn, Hampstead, Hendon, Edgware, and Harrow Weald. Two of those which I have were shot as late as the 25th of April, and proved to be a pair. They had been observed on an unfrequented tract of land, with three others, for more than a fortnight previously; and it appeared, from a close examination, that both birds must have been sitting, inasmuch as the breast of each was destitute of the soft down which always covers it before incubation has commenced. I found, moreover, rudimentary eggs in the ovary of the female. I then regretted that the birds had been shot; for it would have been interesting to have established the fact of the Ring-Ouzel breeding in this country. The remaining three birds I watched daily, in the hope of discovering a nest, until the 1st of May, when they disappeared. I have since heard that, in 1861, a pair of Ring-Ouzels were killed at Hampstead as late as the 11th of May. They were shot by Mr. Ward in Mill-field Lane, while feeding on some ivy-berries within twenty yards of his house." The present species has been seen by Mr. Edward Bartlett in the Zoological Gardens in the Regent's Park; and we have ourselves had specimens which had been caught by the bird-catchers on Hampstead Heath. Mr. Stevenson says that to Norfolk it is "a regular migratory visitant, though, for the most part, in small numbers, passing northward in spring and southward in autumn, appearing generally in April and October: in April 1856, Ring-Ouzels were unusually numerous during their autumn migration, as appeared from the various notices at the time of their occurrence in different parts of England; and in April 1859, when these birds and Hoopoes were unusually plentiful at the same time, at least thirty specimens were brought to one bird-preserver in Norwich to be stuffed. Their numbers, however, in autumn are generally very small compared with those that arrive here in spring." Mr. Stevenson gives some instances of the nesting of the present species in Norfolk and Suffolk, and believes that it still breeds in certain localities in the former county. In Derbyshire it is by no means uncommon in certain localities. Mr. Sterland records an instance of its breeding in Nottinghamshire, in the vicinity of Sherwood Forest, and mentions an immature male killed at Edwinstowe on the 26th of November, 1856, which is a very late occurrence of the species in this country. Captain Feilden kindly sends us the accompanying note:—"The Ring-Ouzel is a spring visitant to Lancashire, and it breeds there regularly. It is common during the breeding-season on Withnell and Anglezark Moors, an elevated heath-clad district which lies between the towns of Bolton and Chorley. On these moors I have frequently procured nests of the Ring-Ouzel, and invariably found them in banks of watercourses."

We give below a very good account of the Ring-Ouzel in Yorkshire, communicated to us by Mr. Henry Seebohm, from observations made in the neighbourhood of Sheffield. Yarrell also writes:—"Mr. Allis, of York, tells me that it breeds in the higher moorlands of Yorkshire; and the eggs of this bird in my own collection were sent me by Mr. Leyland, of Halifax. Mr. Selby, in his Catalogue of Birds of the County of Northumberland, says it is common in summer throughout the Cheviot range and the higher parts of Cumberland and Durham. At the

meeting of the Berwick Naturalists' Club in September 1834, Mr. Armstrong mentioned having procured the nest of this bird from the hills in the neighbourhood of Wooler."

Mr. Robert Gray observes:—"In many parts of Ayrshire and Argyleshire, especially wild moorlands, where there is a mixture of heath and lichen-covered rocks, the Ring-Ouzel is very plentiful in the breeding-season. Numbers of Ring-Ouzels breed in Dumbartonshire, Stirlingshire, Ayrshire, Wigtownshire, and a few in the upper ward of Lanarkshire. They descend, as the autumn advances, to the lower grounds, where they frequent gardens, and are not in general looked upon as favourites, being then 'dingy and tuneless' thieves, devouring cherries and gooseberries with a keen relish, after a six months' experience of their winter diet. In October they slip away southwards, and leave the west of Scotland by the Mull of Galloway, where young birds occasionally lose their reckoning, and dash themselves against the lantern of the lighthouse. I have never been able to trace this species on any of the outer Hebrides, although Mr. Yarrell states that Mr. Bullock obtained its nest on some of the islands, probably, however, one of the inner group. Mr. Elwes informs me that it has been occasionally found on Islay. It is likewise an occasional visitant to Orkney, small flocks having been observed in 1822, 1829, and 1835. Numbers appeared in these islands in October 1836. These occurrences seem to have escaped Mr. Yarrell's notice." Mr. J. A. Harvie Brown writes to us:—" *Turdus torquatus* is a plentiful species in most muirland districts of Scotland, and, according to my experience, particularly so amongst the innumerable cliffs and heather-topped rocks of the west of Sutherland, which are peculiarly adapted to the habits of the species. In the above district I have taken as many as three nests of eggs in the course of an afternoon's stroll by the banks of a single mountain-burn. In this county (Stirlingshire) they are very plentiful in certain localities, and in autumn come down from the hills and frequent the farmers' gardens previous to their migration in winter." Mr. A. G. More says that Mr. Dunn has informed him that it occasionally breeds in Hoy; but Dr. Saxby includes it among the "passing visitors" to Shetland. He remarks:—"Although I have seen this bird in June, I have no proof that it breeds here. It is far from common." Thompson writes very fully concerning the species in Ireland, where, he says, it is found during summer in suitable localities over the island. "It breeds about the mountains of Dublin and Wicklow, and is stated to appear there in flocks in spring and autumn, at the latter season to eat the berries of the mountain-ash (*Pyrus aucuparia*). It is said to frequent the hills about Portumna, on the western border of Galway; and Mr. M'Calla states that a few breed in the least frequented parts of the mountains of Connemara, where he has often searched in vain for their nests, though satisfied that they were near; for on leaving their supposed vicinity the old birds followed him to a considerable distance, uttering their mournful notes. They are plentiful in the autumn, evidently from migration, although never seen in flocks in spring, and are called *round-berry* birds in that district, from the circumstance of their feeding on the berries of the rowan or mountain-ash. Ring-Ouzels frequent the mountain-tops, Sheve-na-mon, &c., about Clonmel (Tipperary), where the country-people call them *cow-boys*; and a few have been met with in summer among the Comeragh Mountains, county of Waterford. This species is mentioned in the fauna of Cork as a summer visitant to the mountainous districts; and is common at that season in the most rocky parts of the mountains of Kerry, within a few miles of the sea-coast, in the same haunts with Choughs and Eagles."

Our friend Mr. Robert Collett, of Christiania, writes to us as follows:—"The Ring-Ouzel is here, in Norway, a true alpine species, which only in the high north and on the west coast breeds near the sea-level. During the season of migration, on the other hand, it is more or less numerous in the lowlands, but is certainly the least common of our Thrushes. I have observed it in small flocks of about a dozen individuals, but more generally singly." He gives the following information as to its distribution in that country:—"It is found on the fells only, during the summer season, in all southern and eastern portions of the country down to Christiania Stift, and breeds numerous in the birch regions; but it seldom visits the subalpine regions, as at Ringerike, in Krogkleven. Along the west coast and further to the northwards it breeds at all altitudes above the level of the sea, and is found especially on the islands inside the polar circle. It occurs in Ostfinmark; but it is uncertain whether it breeds there or not. In the spring and autumn it visits the lowlands and remains here and there (as, for instance, at Christiania) through the winter. . . . In the western part of the country it appears generally to build on the ground, and in the eastern fells in low trees or bushes." Near Bodö, in Norway, Messrs. F. and P. Godman found the Ring-Ouzel. They observe:—"Birds of this species were scattered over all the mountains in the neighbourhood, and were there when we first arrived. We found one nest, situated on the ground, and containing four eggs. This species was far more shy than either Fieldfare or Redwing." Nilsson states that it inhabits the northern parts of Sweden, only occurring in the south in the spring and autumn: it is not uncommon on the fells, in the birch- and willow-regions, during the summer season, and is found in similar localities to those frequented by the Rock-Ptarmigan. Wheelwright met with the bird at Quickjock, in Lapland, but observes:—"The Ring-Ouzel was not a common bird here; but a pair or two were distributed here and there at the bottom of the fells. We took two nests—the one from a tree, the other from the ground—as late as July 2nd."

Sommerfelt records it as occasionally found at the Varanger fjord in summer. In Finland it is the rarest of the Thrushes, only having been observed at Aavasaksa, above Torneå, and once by J. von Wright at Haukivuori Kapell, in Pieksämäki parish, in June 1843. Liljeborg records it as tolerably abundant at Schwietskaja. In Denmark, according to Kjærbölling, it occurs only during migration in October, and again in March. Baron von Droste Hülshoff says that it passes through Borkum, during migration, in large flocks.

Naumann remarks that it cannot be called a common species in Germany, especially as far as regards the plains; for it is essentially an inhabitant of the mountains, not, however, frequenting the high ranges, but restricting itself to the central portions and the mountain-forests. During migration it appears to follow the mountain-ranges, as it is less seldom observed in the woods in the flat country. None remain in Germany over the winter, and the autumnal migration does not last more than a fortnight. They generally migrate during the night, usually singly or in pairs, seldom in families, and endeavour to hide in the thickets during the daytime, so that they are not often seen. Borggreve writes that "it is a common bird during the summer in the low wood-growth on the Reisingebirge. Von Gloger first observed it; and more recently it has been noticed by Tobias, A. von Homeyer, and also, in the Tatra, by Schauer. Speerschneider observed it in the Thüringer Forest at the end of May. As a passing migrant, coming from the north, it occurs almost regularly in the mountain-districts, but more sporadically and periodically

on the plains." Dr. E. Rey writes that he observed it at Halle a. S. in 1867, and also at Cöthen the same year, at the latter place in numbers. "These birds," says Count C. Wodzicki, "inhabit the Carpathians in large numbers. Every year during the summer season they follow in the wake of the shepherds' huts, and in winter frequent the large woods, often coming down on to the plains." Our friend Dr. Taczanowski kindly informs us that it is only met with accidentally in Poland, in the spring and autumn, amongst flocks of other Thrushes, but is common, and breeds in the Galician Carpathians.

Schlegel states that a few are said to breed in Holland, but it is not a common bird there, even during migration. In Belgium it is, according to De Selys-Longchamps, more or less numerous during the double migration in spring and autumn: it is said to breed occasionally in the Ardennes. De la Fontaine believes that it breeds regularly in Luxemburg; while Godron, in his work on the Ornithology of Lorraine, says that it passes through that country in spring and autumn, and is seen more particularly on the chain of the Vosges. Kræner records it as sedentary in Alsace from April to October, inhabiting the mountains, especially near the rocky escarpments of Hoheneck, at the foot of the valley of Munster. According to Degland and Gerbe it is found in the Vosges, the Hautes and Basses Alps, Auvergne, and the Pyrenees. In the north of France it occurs during migration in November, and, on its spring journey, late in April or early in May. In Savoy we are informed by Bailly that it inhabits during the summer the pine-forests in the mountains, as well as rocky, bush-covered localities. It is common in the forest of Nivolet, on Apremont, Margériaz, on the Haute Maurienne, Tarantaise, Faucigny, and in Switzerland. It is but rarely found on the plains, and only during the autumn migrations, or on its return after the close of the winter. It breeds in Savoy about the middle of April or early in May. Mr. Howard Saunders says that in Spain it has been "observed in the Sierra Nevada, where it undoubtedly breeds, descending to the low country in autumn and winter in flocks. I have lately received nest and eggs from Colmenar." Major Irby, in a private letter, informs us that he has seen it near Gibraltar on the 20th of March, which is the earliest date on which he observed it, up to the 8th of April; but it occurs there only as a passing visitor. In Portugal the Rev. A. C. Smith says it is very rarely seen. It is sometimes met with on the opposite coast; for Mr. Tyrwhitt Drake records one was killed a few years ago at Tangier.

Loche states that it is not common in Algeria, where it is found in the wooded mountainous localities, and but seldom on the plains. Mr. J. H. Gurney, during his excursion to Algeria, procured the Ring-Ouzel at Guelt el Stel. The species is not mentioned by Mr. Salvin in his paper on the birds of the Eastern Atlas, nor by Canon Tristram in his essay on the 'Ornithology of Northern Africa;' but the latter gentleman's collection contains a specimen from Fondouk. Mr. Wright says that it arrives in Malta "about the same time as the other Thrushes; but it is one of the rarest. Nevertheless a winter seldom passes without some being taken."

According to Doderlein it is of rare occurrence in Sicily; and Benoit only procured one specimen near Messina in the course of many years. Hitherto it has not been recorded in Sardinia. Salvadori states that it arrives in Italy in autumn with the other species of the Thrush family, but it becomes rare away from the Alpine districts. It has been said to nest in Italy by Savi; and Bettoni cites Lombardy as a favoured district. Seidensacher observes that numbers breed in the Bacher Mountains, in Styria, where he procured several nests on the 15th

of May 1862. Both Lindemayer and Von der Mühle state that this species is one of the very rarest birds found in Greece. Lord Lilford observes:—"I saw one of this species near Scutari, in Albania, about the middle of August 1857." Messrs. Elwes and Buckley write concerning this species:—"Observed by us in the Dobrudscha, and also found near Constantinople." Mr. Robson has sent us a specimen from Belgrade, in Turkey; and Canon Tristram's cabinet contains a specimen procured by the same collector on the Ortakeuy Hills. Near Odessa they occur in the spring and autumn in small numbers; and Von Nordmann found them breeding in the mountains of Adshara, in June 1836, at an altitude of from 5000 to 7000 feet, in the subalpine region, where they built their nests in isolated bushes of *Rhododendron caucasicum*. Pallas never found it in the parts of Russia which he traversed. It occurs, he says, in the Caucasus, the Crimea, and was sent in a collection of birds from Persia. It was killed on the Caucasian Alps by Ménétries, at a height of 8000 feet. Sabanäeff includes the Ring-Ouzel in his list of birds found in the Ural, on the authority of M. Martin, who procured it at the Sysertsky mines; but Sabanäeff himself never met with it. This is probably the eastern limit of its range, as none of the Siberian travellers have, so far as we can ascertain, recorded its occurrence eastward of the Ural chain.

Canon Tristram appears never to have seen this species in Palestine; and Captain Shelley has not met with the present species in Egypt himself; but he gives the following information in his work on the birds of that country:—"Keyserling and Blasius state that this bird comes into Egypt in the winter; and Von Heuglin says that a naturalist in Cairo informed him that he had often killed it in Lower Egypt."

The following notes are taken from Macgillivray's 'British Birds':—"The Ringed Thrush arrives in the south of Scotland about the middle of April, and departs in the beginning of October. It betakes itself at once to the open, hilly, and mountainous tracts, where it prefers the shelter of the juniper, furze, and heath bushes, to that of woods or thickets. Extremely shy and vigilant, it seldom permits a near approach, but betakes itself to flight on the least alarm. Its manners, however, are very similar to those of the Blackbird; and as I have studied them with some attention, I am enabled to speak with certainty respecting them. A few individuals are found here and there among the Lammermoor and Pentland Hills, generally in the vicinity of masses of furze and juniper; and I have met with the species in several other parts of Scotland, and even in the island of Skye. Indeed it was there, in the magnificent valley of Coruisk, that I first became practically acquainted with it, having accidentally met with a whole brood accompanied by their parents, in July 1818. There, on the craggy slopes of the lofty and singularly peaked masses of the Cullin Mountains, among the scattered tufts of heath, they seemed to be flying about in search of food, of which one might imagine they could find but little in such a place. But on the green sward of the Pentlands, where the mole is found nearly to the summits, the Ring-Ouzel, besides insects, can readily procure a plentiful supply of earth-worms, for which I have seen it looking out in the manner described under the habits of the Blackbird; like which it hops about with great celerity, stands with drooping wings and slightly elevated tail, and digs up its prey with great vigour. It feeds also on insects, testaceous mollusca, and berries of different kinds. The stomach of one which I examined on the 2nd October 1837 was filled with berries of the rowan, *Pyrus aucuparia*. In the statistical account of the parish of

Galashiels, in Selkirkshire, the Rev. Nathaniel Paterson states that ‘the Moor Blackbird, too, has of late years become a most troublesome spoiler of the garden. It is nearly of the same size as the singing Blackbird, but dingy and tuneless—a daring thief that comes before the windows and carries off a plum nearly as large as itself, showing by its chatter more of anger than fear when it is disturbed in the work of depredation. Currants, gooseberries, cherries, plums, and the finest wall-fruits are its prey.’

“Its flight is strong and direct, or with very little undulation. When pursued, it generally flies at once to a considerable distance, and it is only when you come near its nest or young that it ventures within shooting distance. Like the Song-Thrush, it conceals itself among the bushes, but is much more easily put to flight. When alarmed, it utters a repetition of strong clear notes, like those of the Blackbird, but louder; and its song consists of a few simple, loud, and mellow notes.”

Mr. Wheelwright says, concerning its note:—“Of all the Thrushes, perhaps the wild desultory carol of the Ring-Ouzel is loudest and clearest.” Dr. E. Baldamus observes that its song is very Blackbird-like, and it is by far the best songster of any of the alpine birds, insomuch that when one or two Ring-Ouzels are singing all the rest of the songsters near remain quiet. Its song is loud, and may be heard at a great distance in the mountains. Its call-note is a sharp, harsh *teck töck töck*, to which is often added a *törr*, which is once or twice repeated, and, followed by the syllables *teck töck tack*, appears to be a note of alarm. In a letter addressed to us by Mr. R. Collett, that gentleman says:—“When in the lowlands it seldom utters any thing but its call-note *tack tack*; but in the fells, when near its nest, one may hear its song, which consists of a few monotonous, lengthened notes, not unlike those of a Titmouse, and which may be likened to the syllables *tih-rōo, tih-rōo*.” Mr. J. A. Harvie Brown also writes:—“Mr. R. Gray, in a letter to me, accompanying a nest of eggs taken by him in Ayrshire, aptly describes the cry of the bird when angry or disturbed. He writes: ‘I put the bird off the nest and it uttered a very angry ricketting cry, extremely sharp, and almost like the cry of an angry weasel.’ They have also a cry, doubtless well-known to you, resembling that of the Stonechat or Wheatear; and in many of their habits and postures they seem to approach the Saxicolæ. I have on one occasion found the nest placed quite underneath a large stone, as I believe the nests of *Monticola saxatilis* are often situated.”

Mr. Henry Seebohm has very kindly sent us an excellent account of the nesting, as follows:—“The Ring-Ouzel is a common bird in summer on the moors in the neighbourhood of Sheffield. Early in April their three or four wild and plaintive notes may be heard, or their harsh scream, as they chase each other from rock to rock. Whether they have any more sustained song I do not know. They frequent principally the highest ground, where there is little else but heather, rocks, and Grouse. Sometimes they may be seen feeding on the pastures of the upland farms on the moor-edges, especially after rain, hopping about in search of worms, snails, &c., as the Blackbird and Thrush so often do on our lawns; but I have never seen them in the lower and better cultivated part of the valleys. They are wild and shy, and difficult to approach within gunshot.

“The Ring-Ouzel begins to build towards the end of April. Eggs can be obtained during the whole of May, and even till July; but these latter will probably be a second brood. The nest is almost invariably built on the ground, in the ling on the brink of an embankment or

slope, where the soil has given way and left an abrupt edge. Wherever there is a steep bank covered with high ling, whether it be sloping down to a stream or an old road, you may almost safely calculate upon finding a Ring-Ouzel's nest every two or three hundred yards or so, though some of them may be a year or two old. On the 9th of May, 1870, a party of three of us spent a couple of hours on the moors searching for Ring-Ouzel's nests. Our head-quarters were a farm-house, about two miles on this side of Arhopton. In the course of perhaps a three miles' round, including a mile of old road and about the same distance of mountain-stream with steep banks on each side, we found nearly a dozen old nests, two nearly completed, two with four eggs in each, and one with four young birds. I have never found a nest amongst the short heather; they appear invariably to choose the shelter of ling, at least a foot high. In one instance the nest was placed on a rock on the very top of the moors, in a cavity perhaps eighteen inches high, nearly the same depth, and twice as wide, in the range of rocks which skirts the edge of the moors. In this hole in the rock some plants of ling had got a footing, and sheltered behind them were three old Ring-Ouzel's nests. In many instances the foundations of the nests appear to have been puddled with mud, but in others nothing of the kind can be traced. In the cases where it was placed on the bare rock a ring of mud formed the foundation of the structure. The nest is very similar to that of the Blackbird or Missel-Thrush, perhaps a little looser in its construction and a trifle shallower. The outside is composed of coarse dry grass, with here and there a leaf or two and a little dry moss. Almost always there is a twig or two of heather woven into the nest, and not unfrequently a slender twig of larch. The inside in all the nests which I have seen was substantially lined with dry stalks of that very fine dark green grass which abounds on the moors; but all are dry and yellow as two-year old hay. So far as my experience goes, the Ring-Ouzel always lays four eggs. The typical egg has a ground-colour almost as blue as that of a Thrush, with blotches and little spots, especially towards the large end, of reddish brown or chestnut. Very rarely you may find a Blackbird's egg which might be difficult to tell from that of the Ring-Ouzel, but the latter are much more likely to be confounded with those of the Missel-Thrush. I have eggs of the latter bird in which the ground-colour is unusually blue, and Ring-Ouzel's eggs in which the ground-colour is unusually brown, which it is quite impossible to distinguish from each other."

Mr. Robert Collett has further sent us some observations on the breeding of the bird in Norway:—"Its nest is placed under juniper bushes or in low bushes; and in Hallingdal I have found one so high up in the fells that it was placed on the very last stunted fir bush. This nest, on the 22nd of June, 1863, contained four eggs, which were about five or six days' incubated, and one of which was much lighter in colour than the rest. The nest resembled that of *Turdus pilaris*; but the foundation was composed of greener materials. In some instances I have found six eggs in one nest. The eggs are deposited late in May and up to the end of June, on the 21st and 23rd of which month I have seen fledged young." According to Count Wodzicki's observations in Galicia, only the older birds breed twice in the year, building their first nest amongst the snow; the younger birds breed only once in the season.

Hewitson gives good illustrations of the eggs in his work on the 'Eggs of British Birds' (i. p. 93), remarking that the nest "is very similar to that of the Blackbird, and is outwardly composed of pieces of heather and coarse grass, with a slight layer of clay, and thickly lined with

fine dry grass. It is frequently roofed over by a projecting ledge of rock, or a bunch of heather. The eggs are four or five in number; they are more like those of the Fieldfare than those of the Blackbird, and very rarely resemble the common closely freckled egg of the latter. They are frequently more closely marked than figure 3 of the plate, and with much lighter spots of red, brown, and purple, and in some of their varieties resemble the figure of the egg of the Fieldfare. Figure 4 is a variety of unusual beauty, and a good deal like the eggs of the Missel-Thrush."

We have before us a series of the eggs of this species, from Dresser's collection, and two nests, for which we are indebted to our friend Mr. Henry Seebohm, of Sheffield, whose notes on this species we give above. The nests bear great resemblance to those of the common Blackbird, are tolerably neatly constructed of coarse dried grasses and bents, worked together with earth, and lined with finer grass-straws, and the eggs are light bluish green, or watery blue, spotted and blotched with dark red, approaching in character much closer to the eggs of the Missel-Thrush than to those of the Blackbird. In size they measure from $1\frac{2}{40}$ by $\frac{33}{40}$ to $1\frac{8}{40}$ by $\frac{35}{40}$ inch respectively.

Mr. Harvie Brown writes to us:—"After an examination of a carefully selected series of forty eggs of *Turdus torquatus*, and a comparison of these with forty-eight eggs of *Turdus pilaris*, the latter chosen from some hundreds of specimens obtained by E. R. Alston and myself in Norway, I find it difficult to decide which of the two species presents the greater variation. In the eggs of both species examples occur approaching very closely to typical eggs of *T. merula* and of *T. viscivorus*, whilst amongst the eggs of *T. pilaris* others are scarcely to be distinguished from some varieties of *T. iliacus* (even in the matter of size closely approaching each other); and amongst the eggs of *T. torquatus* are specimens closely resembling typical eggs of *T. musicus*, and differing from them only in having the ground-colour of a paler blue, and the spots purple and lilac instead of black. So near do these last approach eggs of *T. musicus*, however, that if placed in the drawer along with them, they could hardly be separated without reference to their history."

Dr. E. Rey writes to us that he has procured eggs of this bird from Sweden, Silesia, Mähren, and Galicia, and gives the average size of twenty-one eggs in his collection as 30.4 by 21.7 millims., the largest measuring 31.5 by 22.5, and the smallest 28.5 by 20.5 millims. respectively.

In the preparation of the above article we have examined the following specimens:—

E Mus. Sharpe and Dresser.

a, juv. Near Sheffield (*H. Seebohm*). *b*. Norway (*Collett*). *c*, ♀. Sweden, June 2nd, 1857 (*C. J. Sundevall*). *d*, ♂. Palsgard, May 1867 (*A. Benzon*). *e*. France (*Fairmaire*). *f*, ♂. Belgrade, Turkey, September 26th, 1869 (*T. Robson*).

E Mus. H. E. Dresser.

a, ♂. Silesia (*Dr. Kültter*).

E Mus. Salvin and Godman.

a. Longshaw, Derbyshire, July 1854 (*O. Salvin*). *b*, ♀. Bodö, Norway, June 2nd, 1857 (*F. Godman*). *c*, *d*, ♂. Skærstad, Norway, May 14th, 1857 (*F. Godman*). *e*, juv. Tunor, S. Norway, June 27th, 1866 (*J. Baker*). *f*, *g*, *h*. S. Norway, July 1866 (*J. Baker*).

E Mus. J. H. Gurney, jun.

- a.* Perthshire (*F. Bond*). *b, c*, ♂, ♀. Northrepps, Norfolk, May 10th, 1866, and May 9th, 1868 (*Galley*).
d, ♀. Near Aylesham, Norfolk, October 11th, 1870. *e*, ♀. Guelt el Stel, Algeria, March 19th, 1870
 (*J. H. G.*).

E Mus. H. B. Tristram.

- a.* Alston Moors, Cumberland. *b*, ♀. Kingsbury, Middlesex, October 20th, 1864 (*J. E. Harting*). *c*, ♀.
 Ortakeuy Hills, Turkey, October 22nd, 1864 (*T. Robson*). *d.* Fondouk, Algeria, April 16th, 1856
 (*H. B. T.*).

E Mus. Howard Saunders.

- a*, ♀. Seville, April 1870 (*Ruiz*). *b, c, d.* Near Valencia, November 12th and December 20th, 1871.

E Mus. W. Schlüter.

- a*, ♂. Sweden. *b*, ♀. Schleswig. *c*, ♂. Galicia, May 1869. *d*, ♂. Galicia. *e*, ♂. Mähren.

Genus MONTICOLA.

Turdus apud Linnæus, Syst. Nat. i. p. 294 (1766).

Lanius apud Gmelin, Syst. Nat. i. p. 310 (1788).

Saxicola apud Koch, Baier. Zool. p. 185 (1816).

Monticola, Boie, Isis, 1822, p. 552.

Petrocincla apud Vigors, Zool. Journ. ii. p. 396 (1826).

Petrocossyphus apud Boie, Isis, 1826, p. 972.

Sylvia apud Savi, Orn. Tosc. i. p. 218 (1827).

Petrocichla apud Keyserling & Blasius, Wirbelth. Eur. p. 175 (1840).

By many authors the Rock-Thrushes have not been separated from the true Thrushes; but inasmuch as in their habits, general style of coloration, and to some extent also in form they differ from the Thrushes, and are as it were a connecting link between them and the Chats, it appears only right that they should be kept apart. I thought at first that the Blue Thrushes could fairly be kept generically distinct from the Rock-Thrushes, and proposed, therefore, to use the generic name of *Petrocossyphus* for them; but further investigation convinces me that it is not advisable to separate them. The present genus inhabits the Palæarctic, Ethiopian, and Oriental Regions; but only two species are found within the limits of the Western Palæarctic Region. The Rock-Thrushes inhabit dry rocky localities; and one species at least exhibits a great partiality for old ruins. They are solitary in their habits, and do not migrate in company with others of their own species. They are good songsters, like the true Thrushes, but are much more insectivorous than these, and procure their food almost entirely on the ground or amongst rocks and ruins.

They place their nests, which are tolerably well constructed and cup-shaped, in the clefts of rocks, or in holes in old ruins, or even, in some cases, in buildings which are close to inhabited houses, and deposit pale greenish-blue eggs which are, as a rule, uniform in colour; but occasionally one finds eggs which are faintly dotted with pale rufous.

Monticola saxatilis, the type of this genus, has the bill stout, straight, rather broad at the base, the ridge curved towards the point; nostrils basal, round, partly covered with minute hairs; bristles on the gape scarcely visible; first quill very minute, the second and third nearly equal, the latter being the longest; feet stout; tarsus with one long anterior plate and four inferior scutellæ; tail short, nearly even or slightly rounded.

The other species found in the Western Palæarctic Region is *Monticola cyanus*, which I have in error called *Petrocossyphus cyanus*.



ROCK-THRUSH.
MONTICOLA SAXATILIS
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ROCK-THRUSH.
MONTICOLA SAXATILIS

MONTICOLA SAXATILIS.

(ROCK-THRUSH.)

Turdus saxatilis, Linn. Syst. Nat. i. p. 294 (1766).

Le Merle de roche, Montb. Pl. Enl. 562.

Lanius infaustus, Gm. Syst. Nat. i. p. 310 (1788, ex Montb.).

Saxicola montana, Koch, Syst. d. Baier. Zool. p. 185 (1816).

Monticola saxatilis, Boie, Isis, 1822, p. 552.

Petrocincla saxatilis, Vigors, Zool. Journ. vol. ii. p. 396 (1826).

Petrocossyphus saxatilis, Boie, Isis, 1826, p. 972.

Sylvia saxatilis, Savi, Orn. Tosc. i. p. 218 (1827).

Petrocossyphus goureyi, Brehm, Vög. Deutschl. p. 370 (1831).

Petrocossyphus polyglottus, id. op. cit. p. 370 (1831).

Petrocichla saxatilis, Keys. & Blas. Wirb. Eur. p. 175 (1840).

Merle de roche, French; *Codirossone*, Italian; *Gianbublu*, Maltese (*C. A. Wright*); *Mirlo de roca*, *Mirlo pintado*, Spanish (*Lilford*); *Steinmerle*, German.

Figuræ notabiles.

Montb. Pl. Enl. 562; Naum. Vög. Deutschl. ii. Taf. 73; Yarr. Brit. B. Suppl. i. p. 18; Gould, B. of Eur. ii. pl. 86; Fritsch, Vög. Eur. tab. 23. figs. 22, 23; Gould, B. of Gt. Br. pt. xv.; Bettoni, Ucc. Lomb. tav. 25, 25a.

♂ *ad.* pileo cum collo et gutture toto cyanescenti-cinereis, hâc medialiter vix albicante: dorso medio cum scapularibus intùs et parte basali plumarum uropygialium purè albis: interscapulio, scapularibus extùs et uropygii plumarum parte apicali nigris paullò cyanescente nitentibus: tectricibus supracaudalibus et caudâ lætè cinnamomeis, rectricibus duabus centralibus et quarundam reliquarum apicibus pallidè cinerascenti-brunneis: alis brunneis, tectricibus paullò saturatoribus, remigibus angustè fulvido marginatis, secundariis dorsalibus magis conspicuè albido terminatis: corpore subtùs lætè aurantiaco-fulvo, pectoris superioris lateribus cyanescenti-nigris: abdomine medio et subcaudalibus minimè brunneo linealiter maculatis: rostro et pedibus nigricantibus: iride brunneâ.

♂ *hiem.* similis ptilosi æstivæ, sed obscurior, notæi plumis fulvescenti-brunneo marginatis: dorso postico albo cinereo-nigro marginato: corporis subtùs plumis fulvido marginatis.

♀ *mari* dissimilis: pileo et dorso cinerascenti-brunneis, scapis plumarum saturatè brunneo indicatis: pileo uropygioque paullò cinereo lavatis: dorso imo fulvo maculato: tectricibus supracaudalibus pallidè cinnamomeis, his et plumis uropygialibus brunneo terminatis: caudâ cinnamomeâ, rectricibus duabus mediis et externarum apicibus cinerascenti-brunneis: alâ brunneâ, remigibus paullò saturatoribus, angustè brunneo marginatis, secundariis interioribus fulvo terminatis: regione paroticâ brunneâ, vix rufescente lavatâ et obsoletè fulvo lineatâ; genis et colli lateribus brunneis, fulvo maculatis, plumis medialiter fulvis brunneo marginatis: gutture fulvescenti-albo: pectore superiore brunneo, fulvo longi-

tudinaliter maculato: corpore subtùs reliquo fulvo, vix aurantiaco tincto, plumis omnibus brunneo marginatis: subalaribus et subcaudalibus aurantiaco-fulvis.

♀ *juv.* similis feminæ adultæ, sed supra cinerascens, dorso conspicuè fulvo maculato: plumis corporis subtùs albido marginatis et magis conspicuè brunneo transnotatis.

♂ *juv.* præcedenti simillimus, sed tectricibus alarum semper saturioribus, nigricantibus vix cyanescenti-cinereo nitentibus.

Young Male. Head and neck ashy brown, with edgings of pale fulvous or white to all the feathers; rest of the upper surface of the body darker brown, with very broad margins of fulvous white to each of the feathers; centre of the back white, this colour being obscured and much concealed, only the base of each feather being white, the apical portion being greyish brown with a fulvous margin at the tip; upper tail-coverts clear cinnamon, with a brownish bar near the tip of each feather, which has a terminal margin of white; tail itself clear cinnamon, very narrowly tipped with white, the two centre feathers ashy-brown, a shade of this colour being also apparent towards the tips of some of the other feathers; wing-coverts blackish, with a shade of iron-grey, all the feathers very conspicuously margined with fulvous white; quills greyish brown, inclining to black near the tip, the margins to the feathers being of a pale brown colour, shading into fulvous white at the tip; lores and feathers round the eye whitish; ear-coverts fulvous brown, with a faint shade of rufous; cheeks and sides of the face and neck fulvous, each feather crossed by an irregular bar of brown before the tip, which is whitish, thus producing a strongly mottled appearance; chin and centre of the throat whitish, very slightly mottled with the brown line across the feather, this being in most cases entirely obsolete; rest of the under surface of the body orange rufous, all the feathers margined with whitish, and transversely vermiculated with a single crescentic line of brown, which is more irregular on the abdomen, sometimes being represented simply by two spots on the tip of each plume; these crescentic markings are absent on the under wing- and tail-coverts, which are merely margined with whitish at the tips of the feathers; bill deep horn-brown; legs brownish black. Total length 8·5 inches, culmen 0·9, wing 4·9, tail 2·6, tarsus 1·15.

Obs. The bird from which the above description has been taken is a young male from Italy forwarded to us by Mr. W. Schlüter, of Halle. He has sent us at the same time two young females in the same mottled plumage: they may, however, be distinguished from the male, even at this early age, by the absence of a white dorsal patch, and the other differences noticed below.

Obs. The absence of dates to all the young specimens prevents us from stating their ages approximately; but they seem to be young birds of the year in full winter plumage; but whether on emerging from this winter dress the males don their full blue livery we are unable to say. Mr. Howard Saunders, however, possesses a specimen obtained in the Sierra Nevada in April 1871, which, although possessing a blue head and partial white back as well as the orange under surface of the adult, still exhibits on the throat and sides of the neck remains of the spotted plumage. In the collection of Mr. J. H. Gurney, Jun., is another specimen, unfortunately undated, which is not so far advanced and shows the blue appearing on the head and the orange on the breast, so far as we can see, by a change of colour in the feather and not by a direct moult.

A bird in Sharpe's private collection of African birds from Bissao is in winter plumage, and seems to be in partial change from the young to the adult livery, which latter it has nearly assumed; the wings, however, are still brown, and only a few of the coverts have as yet assumed any iron-grey tint. The lower back as well as the underparts still show traces of the young mottled plumage. This would seem to indicate the correctness of our supposition that it is in the first winter that the young bird gains his

blue-and-orange plumage; but we are by no means certain that these specimens are always correctly labelled as males.

Adult Male in breeding-plumage. Entire head and neck ashy blue, inclining to cobalt; interscapular region and scapulars blackish, slightly washed with blue; the dorsal scapularies and the whole of the centre of the back pure white; rump greyish, mottled with white, the basal portion of the feather being for the most part of this colour; upper tail-coverts cinnamon; tail a little darker cinnamon, the two centre feathers pale ashy brown, the others more or less marked on the outer web with brown; wing-coverts dark brown, the lesser ones with a slight shade of iron-grey; quills lighter brown, the secondaries a little darker, the inner ones margined with whitish at the tip; entire throat ashy blue with a slight shade of cobalt, uniform in colour to the top of the head; rest of the under surface of the body rich orange rufous, with slight remains of brown markings on the abdomen and under tail-coverts; bill and feet black; iris brown. Total length 8 inches, culmen 0·9, wing 4·7, tail 2·6, tarsus 1·15.

Adult Male in winter plumage. Similar to the summer plumage, but more obscure; the whole of the head margined with ashy brown, the white back obscured by dull margins to the feathers, and the rest of the back, scapulars, and the upper and under wing-coverts edged with fulvous; the throat-feathers margined with ashy, and those of the rest of the orange under surface with whitish.

Young Female. Plumage similarly mottled to that of the young male above noticed, but browner; instead of having the back white, there is no distinguishable patch of white feathers, but on separating them carefully, the bases of the lower dorsal plumes will be found to be of a whitish colour; the wing is much paler, and instead of the wing-coverts being shaded with iron-grey, all the feathers are broadly margined with ashy fulvous; besides the two central tail-feathers, which are entirely ashy brown, several of the other feathers are marked with this colour near the tip, and the external web of the outer feather is also ashy brown. The orange of the under surface is paler and is more thickly obscured by the whitish margins to the feathers, the brown transverse markings being broader and more distinct.

Adult Female. Upper surface of the body brown, with narrow longitudinal shaft-stripes of darker brown; the nape and centre of the back somewhat tinged with cindery blue, a few of the scapulars showing an obsolete fulvous tip to some of the outer feathers; centre of the back mottled with creamy buff, the basal part of the feathers being of this colour, forming a longitudinal diamond-shaped mark; rump slightly shaded with cindery blue, with faint brown tips to the feathers; upper tail-coverts pale cinnamon, with a distinct spot of brown at the tip; tail cinnamon, the two centre feathers and the external margin of the outer feather ashy brown; wing brown, the coverts as well as the quills edged with paler brown, the inner secondaries tipped with whitish; ear-coverts brown, slightly washed with fulvous; cheeks and sides of the neck greyish brown, the centre of the feathers buffy white, causing a very plainly mottled appearance; chin and throat whitish; rest of the under surface of the body buffy white, with a tinge of clearer orange on the upper breast and flanks, all the feathers margined with brown, giving an scalloped look to the feathers; under wing- and tail-coverts pale orange, with a few marks of brown on the former. Total length 7·5 inches, culmen 0·95, wing 4·55, tail 2·5, tarsus 1·1.

Obs. In describing the above birds we have in a great measure taken it for granted that the sexes differ in the manner indicated in all works on ornithology, viz. that the adult male is a blue-and-orange bird and that the female is always spotted; nor have we as yet seen any specimen which disproves this fact. It should, however, be noted that some females have much more blue on the head and rump than others; and we think that the plumages of the female should be made a subject for further study, when we remember that the hen of the Blue Rock-Thrush after maintaining a spotted plumage for several seasons ultimately puts on a blue livery like that of the adult male. That the female of the present

species breeds in a spotted dress is quite certain; for Mr. Howard Saunders tells us that on one occasion when examining a nest of this species in Spain, the old mother was exhibiting signs of great distress within a few feet of him; and he is thus enabled to declare that the female in this instance was in the spotted plumage usually assigned to that sex.

Explanation of the Plates. Our first Plate represents the adult male and female; while on the second Plate are shown the two young birds referred to in the above descriptions. It will be seen that the young male is much darker on the wing-coverts than the female, and that he likewise has the white dorsal patch more fully developed.

THE Rock-Thrush is known in Europe as an inhabitant of the more southern parts, seldom penetrating beyond certain favoured localities in Germany, and never extending into the extreme northern portions: it has twice occurred in England, and once in Heligoland; but in both these places its appearance must be considered as purely accidental. Its winter home seems to be in North-eastern Africa, whence it ranges into Senegambia, on the West Coast. During the summer it occurs throughout Siberia, but does not visit the high north. A few instances are given below which illustrate its southern range in Asia; but it appears seldom to occur within the limits of the Indian region.

The only instances of its capture in England are those recorded by Yarrell in his 'Supplement.' "One," he says, "was obtained, on the 19th of May 1843, by Mr. Joseph Trigg, who shot it at Therfield, near Royston, in Hertfordshire, while it was sitting on an ash tree, in the evening of the day mentioned. I saw the specimen before it was skinned for preservation by Mr. John Norman, of Royston, and received the first notice of the occurrence from my friend Thomas Wortham, Esq., whose influence with Mr. Trigg obtained for me the loan of the bird for my use in this work. I have now very recently heard of another specimen shot by a game-keeper, who, not aware of the interest attached to such a bird, saved only the head and neck; but this portion having been shown to a gentleman conversant with ornithology, the species was identified without difficulty from its peculiar colouring."

Gätke has recorded its occurrence in Heligoland, and in Germany; according to Borggreve it is a regular summer visitor on some parts of the valleys of the Rhine and Mosel, a few breeding on the Hartz Mountains and Thuringia. Naumann states that it occurs, but not plentifully, in Hungary and Dalmatia, and in central Switzerland. In other parts of Germany it is only found singly, as in the Tyrol, Austria, Salzburg, in the Rhine Mountains. Occasionally, but rarely, it visits the mountains of Silesia, Bohemia, and Thuringia. Our friend M. Carl Sachse writes to us as follows:—"It is common on the central Rhine and in the side valleys from Bingen to Bonn."

Baron de Selys-Longchamps records one instance of its occurrence near Tournay in the summer of 1841; and Mr. Holandre notices another at Metz. In Luxembourg, according to De la Fontaine, "it breeds regularly in the ruins of the Château de la Roche, Mindenlerlay, Osweilerlach, and Ernzerberg near Echternach, in the rocks of Maersdorf, and probably also in those of La Haute Sûre." Godron records it as a "very rare bird of passage, occurring at long intervals in Lorraine, where it has been killed at Nancy and at Metz." Kræner says that in Alsace it "is sedentary in the mountains from April to September, nesting in clefts of rocks

between the châteaux of Andlau and Spesbourg (near Barr). An old male was killed in May 1849 at Andlau itself; a young one of the same sex in September at the Robertsau, near Strasbourg." According to Degland and Gerbe it is found in the south of France, the Pyrenees, Dauphiné, Franche-Comté, and in Switzerland; and MM. Jaubert and Barthélemy Lapommeraye observe as follows:—"It breeds in almost all the desert, solitary, and rocky localities in the south of France, arriving in April, and leaving in September." In Savoy, according to Bailly, it is not rare during the summer in the rocky parts of the mountains. The males generally arrive alone from the 12th to the 20th of April, according to the season; the females, which also return alone, do not appear until five or six days after the males, and they then pair. Those that return to the Alps remain paired a few days in the rocks of the lower hills, until the snow leaves and enables them to go to their summer home.

In Hewitson's 'Eggs of British Birds' the Rev. S. C. Malan says that he "had frequent opportunities of watching the habits of the Rock-Thrush while residing in the neighbourhood of Geneva. It is not by any means a rare bird at the foot of the Selève, a few miles from that city."

Mr. Howard Saunders, in his 'List of the Birds of Southern Spain,' writes as follows:—"In the south I have only observed this species in the Sierra Nevada, where it is abundant. It frequents much higher ground than *P. cyanea*, which species it replaces in Aragon. I found a nest in that province in May, in the side of a gorge, on either hand of which were vineyards." Major Irby says that at Gibraltar it occurs only as a passing visitant, being observed on the rock itself. He tells us that it was first noticed on the 4th of April in considerable numbers, and one was seen returning on the 26th September. Herr A. von Homeyer observed it on the Balearic islands, where it is a migrant, frequenting the stony parts of the valleys in preference to the bare rocks in the mountains. In Portugal it is not rare. According to Loche it is sedentary in Algeria in the mountainous portions of the country, and is not plentiful. It was only occasionally noticed by Dr. Taczanowski during his visit to that country. He writes to us:—"In Algeria it is not numerous; in April 1867 I saw two only, on the road between Constantine and Philippeville." Canon Tristram, in his paper on the ornithology of Northern Africa, says that the present bird is decidedly scarcer in the Sahara than the Blue Rock-Thrush, "more shy and wary, and resorting only to the higher grounds. In the upper portions of the Atlas it is more plentiful; but I have only seen it three or four times in the Desert, and then only on such elevated situations as the summits of the Chebkha, M'Zab." Mr. Osbert Salvin, in the account of his birds'-nesting trip to the Eastern Atlas, also remarks:—"This Rock-Thrush does not appear to be nearly so common as the Blue Rock-Thrush in the districts we visited; indeed, except on one occasion, at Kef Laks, I have no instance noted of having met with it."

It was observed by the late Mr. W. T. H. Chambers in Tripoli. Mr. C. A. Wright says that in Malta it "arrives early in spring (about the middle of March) generally in pairs, and may be seen till May. It reappears in September, on its voyage southward."

Doderlein states that in Sicily it is tolerably abundant on the spring migration on the hills around Palermo; in other parts of the island it is rarer; and he does not believe that any remain to breed there. He adds that it is a regular bird of passage in Sardinia. Count Salvadori states that it arrives in Italy in the spring, and leaves again in September, taking up its

abode in the mountainous districts, and occasionally frequenting the towers of the country-houses. Seidensacher observed it in April 1855 at the old castle of Cilli, in Styria, and says that it breeds at Kirchstätten and Goutze; five fledged young birds were brought to him from the former place on the 29th May 1862.

Lord Lilford says that he found the present bird "common in May, 1857, among the Acroceraunian mountains, where" he adds, "I found the nests of this species, among débris carried down by the melting of the snows, on Ischika, one of the highest points of that range. I have once or twice observed the Rock-Thrush in the island of Corfu, where it is highly prized as a singing bird."

Mr. W. H. Hudleston, in his most entertaining paper entitled "Ornithological Notes from Mesolonghi and Southern Ætolia," writes:—" *M. saxatilis* does not occur so low down as this: it is said to be not uncommon in the higher districts of Greece." Lindermayer observes:—"It is tolerably common in the mountains of northern Greece, and goes down to the province of Attica, where I have often procured it on Hymettus and Pentelikon. It breeds, however, only on the northern mountains. In the Peloponnesus and on the islands it does not yet appear to have been found. It is a resident with us." Dr. Krüper kindly informs us that he found it inhabiting the high mountains of Greece in the conifer region, but in Asia Minor he only procured a specimen during the season of migration.

Respecting its occurrence in Southern Russia, Professor Von Nordmann states that he "found it common in the Crimea, especially near Magaratch, Kikeneis, and Simeis."

Dr. L. Taczanowski writes to us as follows:—"Only in one part of the kingdom of Poland does this bird occur (and a few breed there), viz. in a rocky part of the country between Cracow and Czenstchowa. It is also found in Southern Siberia; and I have received examples from Dr. Dybowski, obtained in Dauria and the Baikal mountains, which agree precisely with birds killed in Europe." Pallas remarks that it is common chiefly in the rocky portions of Siberia—on the Altai Mountains and in the whole of the Transbaikal regions; while according to Père David it passes the summer on the Pekin mountains.

Tracing the present species along the southern course of its range towards its winter home, we find that the European Rock-Thrush was procured by Mr. W. T. Blanford in Upper Burmah, on the banks of the Irawadi, near Ava. He says:—"I am not aware that this bird has ever been recorded from the plains of India, although it was obtained by Dr. Stoliczka in Western Thibet. *P. castaneicollis*, Less., is identical, in Dr. Stoliczka's opinion (J. A. S. B. 1868, xxxvii. p. 34)." Again, we are informed by Dr. Henderson that "a young male of this species was obtained at Shadulla, in Hill Yarkand, on the 21st of September. It was a bird of the year." Mr. Hume, commenting upon the above, remarks:—"I have seen other specimens from the Sutledge valley, near Chini, all adult, and a young bird in much the same plumage as Dr. Henderson's specimen." It was likewise procured in Cashmere by Vigne. Lord Walden's collection contains two beautiful specimens, in full breeding-plumage, from Turkestan; and the next notice of its occurrence to the westward we find in De Filippi's account of the birds encountered by him during his travels in Persia, where he states that he met with it at Elburz. Hemprich and Ehrenberg procured it in Syria; and the accompanying note on the species in Palestine is of very great interest, as Canon Tristram actually witnessed the return journey of a flock of Rock-Thrushes, which he describes

in his usual graphic way:—"Of the Rock-Thrushes *Petrocincla saxatilis*, whose red tail and Redstart-like habits link it most closely with the *Ruticillinae*, is in most parts of Palestine merely a passing traveller, and tarries but a night. On the 8th of April the whole of Mount Gerizim was covered by a restless flock of these birds, which, at a distance, we took for the Black Redstart, so exactly did they resemble that bird in their actions. They hopped restlessly from rock to rock, never taking a flight of more than a few yards; and in this fashion in loose order, ranging for perhaps a mile in breadth, they appeared to be steadily proceeding northwards. When the foremost line had reached the valley, they took a flight across to the foot of Mount Ebal, over the gardens, and then more leisurely mounted the hill. We shot about a dozen, but, being at the time without the assistance of Mr. Bartlett's nimble fingers, I only saved a pair. Afterwards we occasionally met with this bird in the Upper Lebanon, in the month of June, where, no doubt, it was breeding."

Mr. E. Cavendish Taylor, in his paper on the birds of Egypt, remarks:—"I suspect that this species is a spring visitant; for I did not meet with it till about the middle of March, when I saw a fine male in the Temple of Karnak. I afterwards found it common at Damietta in the month of April." The late Mr. S. Stafford Allen, who resided for some time in the country, gives the following note:—"The Rock-Thrush comes northward in the end of April, and evinces a very strong partiality for Arab burying-grounds, where one or two are always to be found at that season of the year." According to Von Heuglin "it is not rare in autumn and spring in Egypt, Nubia, and Arabia, some probably wintering there, and the rest proceeding further south. We found it in November in the country of the Gazelle River (7° and 8° N. lat.), in December and January at Aden, and on the higher mountains of Abyssinia." Dr. A. E. Brehm says it does not winter in Egypt, but passes through Nubia, not even remaining in East Sudan. Mr. Jesse procured it, during the Abyssinian Expedition, at Koomaylee and Senafé; and Mr. Blanford's notes from the same country are as follows:—"Rare on the highlands. I am indebted to Captain Newport for a specimen shot at Adigrat. I myself did not see any." Captain Sturt has lent us a specimen procured by himself during the same expedition. It has been found on the west coast of Casamance and Bissao, but at present it is not known to winter south of the Gambian district.

Baillie's excellent work the 'Ornithology of Savoy' contains a good account of the habits of the Rock-Thrush:—"When at rest they may be found generally in the morning on isolated rocks or stones, sometimes on the top of a tree, whence they utter their song, which resembles that of the Blue Thrush in its flexibility, and in its sweetness and variations that of the Orphean Warbler and Blackcap. From time to time it rises in the air and descends with extended wings, singing, on to its perch again. They sometimes perform this evolution several times without resting, and when close to their perching-place rise again, and descend, until satisfied. Sometimes they thus traverse a considerable distance along the rocks; but they never perform these evolutions with such grace and zest as when they again see the females: they mount ten or twelve metres into the air, and drop almost vertically, singing with all their might, and developing all the harmony of which their voice is capable, until they reach the rocks whence their companions are watching the attractive performance." Von Homeyer also notices the similarity in this bird's song to that of the Blue Rock-Thrush; and Professor von Nordmann

remarks on its power of mimicry, and says he has "heard it imitate exactly the call of the Ortolan." M. Carl Sachse, writing from Coblenz, observes:—"As a cage-bird it is highly valued, as its wild song is sweet, and it is easily taught to whistle tunes. A nest of half-grown young birds will fetch from three to four thalers (nine to twelve shillings); and it is therefore difficult to procure the eggs."

The food of this species consists chiefly, if not entirely, of insects, which they take either on the wing or pick up from the ground; beetles, grasshoppers, and larvæ of various sorts are their favourite food, but they also seek after earthworms, if they cannot find a sufficiency of the first-named insects. Naumann states that they also feed on berries of the *Daphne*, and various wild berry-bearing bushes.

The Rock-Thrush breeds amongst the rocks, placing its nest on the ground in any convenient crevice of the rocks, or amongst the stones. The nest is a loosely made structure of roots, moss, and fine straws, and is lined with feathers and hair, according to Naumann, and fine roots and bents, according to Bailly. When they build on the ground, at the foot of a rock or a small bush, they scratch out a sufficiently large hole to contain the nest. They generally deposit four or five eggs. The following note on the breeding of the present species has been forwarded to us by our friend Mr. Sachse:—"It generally nests amongst the inaccessible rocks, but occasionally in the vineyard walls. In the rock opposite Coblenz, on which Ehrenbreitstein is built, and in holes in the masonry work, as many as six or eight pairs bred formerly. When the nest is not placed in a cranny, it is amongst the stones covered with an overhanging stone, and is always hidden by a bunch of grass. It has two broods in the year." Von Homeyer relates that in the Balearic isles he found a nest in a hole in an old olive-tree, about six feet from the ground.

We are indebted to another kind friend, Mr. Crowfoot, of Beccles, for the loan of two nests of this species, obtained in Lombardy by Count Turati. One of these is well formed and neatly constructed, solely of very fine roots, the entire structure being very slight. The other is heavy and bulky, roughly constructed, and almost flat; the foundation is composed of moss, upon which is a layer of dried grass; and the lining, or upper layer, is composed of fine roots and slight grass bents. The first nest measures in outside diameter $4\frac{3}{4}$ inches, and is about 2 inches high; the second measures 6 inches by $5\frac{1}{2}$ inches outside diameter, and, though nearly flat, is fully $2\frac{3}{4}$ inches in height.

In Dresser's collection are eggs of this species collected by Dr. Krüper in Greece, which measure $1\frac{1}{40}$ by $\frac{31}{40}$ of an inch, and are light blue in colour, without any spots or markings. Dr. E. Rey writes to us that the song of this species so closely resembles that of the Blue Thrush that he never could, when in Southern Portugal, distinguish with certainty the two species from the song alone.

In the preparation of the above article we have examined the following specimens:—

E Mus. Sharpe and Dresser.

a. Savoy (*Fairmaire*). *b.* Switzerland. *c.* Malta. *d.* ♂. Macedonia, May 1st, 1870 (*Th. Krüper*).

E Mus. Lord Walden.

a, b. ♂. Turkestan, May 18th, 1866 (*Dode*). *c.* ♂. Senafé, April 25th, 1868 (*W. Jesse*).

E Mus. R. B. Sharpe.

a. Bissao (*J. Verreaux*). *b*, ♂. Koomaylee, March 24th, 1868 (*W. Jesse*).

E Mus. C. Sturt.

a. Abyssinia (*C. S.*).

E Mus. Howard Saunders.

a, b. Savoy (*Fairmaire*). *c, d.* Sierra Nevada, April 1870 and 1871 (*H. S.*).

E Mus. H. B. Tristram.

a. Geneva (*H. B. T.*). *b, c*, ♂, ♀. Algiers, 1856 (*H. B. T.*). *d*, ♂. Mount Gerizim, April 8th, 1864 (*H. B. T.*).

E Mus. G. E. Shelley.

a, ♂. Mansoura, March 1870 (*E. Cavendish Taylor*).

E Mus. Lord Lilford.

a, ♀, *juv.* San Ildefonso, Old Castile, June 9th, 1865 (*L.*).

E Mus. Salvin and Godman.

a. Hungary (*F. G.*).

E Mus. W. Schlüter.

a, b, c. Italy.



BLUE ROCK THRUSH.
PETROCHELIDON CYANUS

PETROCOSSYPHUS CYANUS.

(BLUE ROCK-THRUSH.)

Turdus cyanus, Linn. Syst. Nat. i. p. 296 (1766).*Turdus solitarius*, Lath. Ind. Orn. i. p. 345 (1790, nec Müll.).*Monticola cyanus*, Boie, Isis, 1822, p. 552.*Sylvia solitaria*, Savi, Orn. Tosc. p. 217 (1827).*Petrocossyphus cyaneus*, Boie, Isis, 1828, p. 319.*Petrocincla cyana*, Keys. & Blas. Wirbelth. Eur. p. 50 (1840).*Turdus azureus*, Crespon, Faun. Mérid. p. 179 (1844).*Petrocincla longirostris*, Blyth, J. A. S. B. xvi. p. 150 (1847).*Petrocincla cyanea*, Degl. & Gerbe, Orn. Europ. i. p. 448 (1867).

Blaumerle, German; *Passere*, *Passera solitaria*, Italian; *Passeru solitariu*, *Merru o Mierru di rocca*, *Solitariu di rocca*, Sicilian (*Doderlein*); *Mirlo di roca, solitario*, Spanish (*Irby*); *Solitario*, Portuguese; *Meril*, or *Ciccu di Diu*, Maltese (*C. A. Wright*).

Figuræ notabiles.

Naum. Vög. Deutschl. ii. Taf. 72; Gould, B. of Eur. ii. pl. 87; Bree, B. of Eur. i. p. 199; Bettoni, Ucc. di Lomb. tav. 22.

♂ *æstiv.* saturatè cyaneus, pileo guttureque conspicuè lætioribus, dorso paullulùm nigro adumbrato: tectricibus alarum ferè dorso concoloribus, majoribus magis brunnescentibus, angustissimè albido terminatis: remigibus nigricanti-brunneis, vix cyaneo lavatis: caudâ unicolori nigricanti-brunneâ: subtùs saturatè cyaneus: rostro et pedibus nigris: iride brunneâ.

♂ *hiem.* similis pilosi æstivæ, sed ubique saturatior, plumis brunnescente marginatis.

♂ *hornot.* cyaneus, plumis pallidè cineraceis varius: tectricibus alarum et remigibus albo terminatis.

♀ *ad.* mari similis.

♀ *jun.* suprâ cinerascanti-brunnea, plumis dorsalibus indistinctè albido limbatis: dorso postico cyanescente, tectricibus supracaudalibus albido marginatis: subtùs fulvescens, vix rufescens, plumis gutturis et pectoris superioris brunneo marginatis: abdomine magis albicanti-fulvo, brunneo angustè transnotato: subcaudalibus potiùs rufescenti medialiter striatis.

Adult male in spring plumage. General colour dull blue, the entire head and chest glossed with silvery blue, giving a somewhat hoary appearance; wing-coverts and quills brownish, glossed with dull blue, with obsolete whitish edgings; tail glossy brownish black; under surface of the body dull blue, of the same colour as the back, with obsolete white edgings to the feathers of the abdomen and under tail-coverts; bill and feet black; iris brown. Total length 8·5 inches, culmen 1·0, wing 4·9, tail 4·4, tarsus 1·15.

Adult male in winter plumage. Differs from the summer dress in being much darker, this appearance being caused by brown edgings to the feathers.

Female. Above greyish brown, with a dull blue lustre on the lower back and rump, the feathers of the head darker in the centre, giving a slightly mottled appearance; general colour of the under surface of the body buff with a dash of rufous, the feathers of the throat being almost uniform buff, those of the cheeks and breast buff in the centre with brown edgings, the form of these plumes seeming rather lanceolate in shape, the feathers of the lower breast and abdomen buff with brown edgings, but more scalloped in appearance; the flanks greyish; quills and tail coloured as in the male, but browner, and with only a slight shade of blue on the wing-coverts; bill and feet black. Total length 9 inches, culmen 1.0, wing 4.8, tail 3.4, tarsus 1.1.

Obs. The fully adult female is exactly like the male.

Young male in first autumn. Bluish, varied here and there with whitish tips to the feathers, all the young plumes being very downy in texture, grey in colour with a buff centre as in the old female; all the white-tipped feathers having a blackish shaft and a black line before the white apex; all the feathers which are being donned are shaded with brownish, as in the winter plumage of the adult; the wing-coverts and secondary quills tipped with white.

Male of the previous year in spring dress. Blue, like the adult male, but always showing either on the back or breast some traces of the white margins of the young plumage.

Obs. In order fully to understand the differences of plumage above described, it may be as well to review the successive changes through which both sexes of the present species pass before gaining their adult livery. We have never had the opportunity of personally examining a nestling; but the young in down are figured by Bettoni in the great work the 'Birds of Lombardy;' and they are there stated to be spotted when in the nest. In that case both males and females must be very similar. But they do not long remain alike; for we have a young male in our collection, lately sent by Dr. Krüper from Macedonia, and killed by that excellent collector on the 22nd of August, 1870, which is in a state of change, and clearly proves that the young male of the Blue Rock-Thrush has even thus early in the autumn begun to assume the blue garb of the mature bird. This is done by a direct moult, the downy buffy-white feathers being shed and blue ones donned; these latter have a white edging, before which runs a black line; and most of the feathers are shaded with brownish, as in the winter plumage of the adult. By the following spring, when the brown shade to the feathers disappears, it is doubtful whether the white edgings to the feathers are entirely lost, especially on the belly, which seems to be the last place where they disappear. The old male, however, has no trace of these white margins, but is blue above and below, becoming more brilliant in summer, and in winter assuming brownish edgings to the feathers, which give it a dingy appearance.

With the female, however, the case is quite different; and it was some time before we could identify the mature female of this species. Scarcely two of our friends, who had seen the birds alive, agreed in their description of the hen; some assured us that the sexes were alike, while others said that the male was blue while the female was spotted. Both these accounts are doubtless true; for we have a good series now before us, from which it would appear that the female takes a much longer time than the male to reach the adult stage of plumage. Thus both sexes are spotted in the nest; but whereas the male has put on his blue livery by August, the female still retains her spotted dress, and would appear to breed in it the second year, as a specimen procured by Mr. C. A. Wright in Malta, in the autumn of 1866, proves. The plumage of this specimen is much worn, the quills being pale brown, lighter at the

tip. In the commencement of the following year the first appearance of a blue plumage takes place, not by a moult, but by a gradual change in the feathers. By the end of February or the beginning of March, a blue shade pervades the whole body, which still, however, preserves the remains of the young mottled dress. It has now to be proved whether the latter is entirely lost during the second year; the absence of specimens precludes our proving this point satisfactorily; for we should have supposed that by March the bird would be in full or nearly full breeding-dress. At all events a female procured by Mr. Salvin in Tunis, on the 8th of the last-mentioned month, is in full blue livery, with only slight remains on the breast of the brown edgings characteristic of the winter plumage.

Explanation of the Plate. The figure on the left hand represents a male in adult blue dress, and gives a good illustration of the plumage in which most specimens in collections are seen. It will be noticed that the remains of a few whitish markings on the chest indicate that the bird is not fully adult; but it will scarcely be credited how rarely birds in perfect plumage, without a trace of these crescent-shaped lines, are to be met with. On the right-hand side of the Plate is drawn a female after breeding; this specimen is a bird of the previous year which has not fully attained the adult dress. In the background on the left will be seen a female gaining the blue plumage.

THE present bird is found chiefly in the countries bordering the Mediterranean; in winter it extends into North-west India; but how far it ranges to the eastward, and whether the true *P. cyanus* really visits China, will be a matter for our further consideration. At present we believe that *P. solitarius*, Müll., takes its place in the Eastern Archipelago and Malacca, as well as the Indo-Chinese region and China proper.

Through the kindness of Dr. Carte we have been able to examine a specimen of the Blue Rock-Thrush, said to have been killed in Ireland. This bird, which is preserved in the Museum of the Royal Dublin Society, is stated to have been shot by a Mr. Brassington in the county of Meath, on November 17th, 1866. Without commenting on the unfortunate circumstances which must have induced an example of this species to wander so far away from its natural habitat, and to occur in Ireland in the *winter*, we may state our opinion, based on an examination of the stuffed bird itself, that it has not been mounted when fresh killed, but from a previously prepared skin. On the other hand, both Dr. Carte and Mr. A. G. More believe that the occurrence of the bird was genuine; and we therefore record the fact as being of interest, and exhibiting the highest northern range of the species in Europe.

In Germany, according to Naumann, it is only found in the south, as, for instance, in the Tyrol, particularly near Trient, and occasionally near the Boden lake. Degland and Gerbe state that it appears annually in the Franche-Comté, near Besançon. In Savoy, we are informed by Bailly that the Blue Rock-Thrush inhabits the inaccessible rocks at the base of the Mont-du-Chat, at the Brisson-Saint-Innocent, the Croix-Rouge, near Chambéry, the Hermitage of Saint-Saturnin, and some rocky parts covered with bushes near Aquebelle and Saint-Jean de Maurienne, particularly at Epierre and Plaurichard. It is, however, nowhere common, and is only found in solitary couples, scattered over the country at long intervals. It arrives about the 8th of April, generally a few days before the Rock-Thrush, and comes singly, or rarely in pairs. Messrs. Jaubert and Barthélemy-Lapommeraye record it as found in Provence, all along the sea-coast, on the desolate rocks round the Gulf of Lyons, and but rarely in the interior. Mr. Traherne Moggridge procured specimens at Mentone, where he found it all the year round. On the

Balearic isles it is recorded by Herr A. von Homeyer as "common and resident." Mr. Howard Saunders states that it is generally distributed throughout the country; and Major Irby tells us that he has found it resident on all rocky ground, being very abundant at Gibraltar. Dr. E. Rey writes, "I found this bird comparatively abundant in Southern Portugal." On the opposite coast of the Mediterranean, Mr. C. F. Tyrwhitt Drake mentions that it is common on rocky grounds in Tangier and Eastern Morocco, where it has a habit of frequenting the cemeteries. Loche says that it is found in Algeria only in the mountainous districts, and never in any large numbers. During his recent visit to this country, Mr. J. H. Gurney, jun., procured specimens at La Chiffa. Mr. Salvin states that it "occurs in all the mountainous parts and rocky passes of the Eastern Atlas; and in such places one may seldom listen in vain for the plaintive notes of this beautiful songster. We were unsuccessful in obtaining their eggs, though many pairs must have had their nests within easy reach of our different camps while we remained in the mountains." Mr. Wright has sent us several specimens from Malta, where it breeds: a note on its habits by this excellent observer will be found below.

Our friend Mr. A. Basil Brooke sends us the accompanying note:—"Blue Thrushes are very common in Sardinia; and I have seen them there at all times of the year. They are, as a rule, a wild, shy bird, and along the neighbouring coast of Italy, where they are found, it is almost impossible to get near them. In Sardinia they are much more confident and tame, which is easily accounted for by the inhabitants never shooting them, there being in most places quantities of small game through the island." It is included by Bettoni among the birds which breed in Lombardy; and the following account is given by Doderlein, who states that this species is "resident in the district of Modena, although not common, a few pairs nesting in the valleys of the upper Apennines. In Sicily it is very abundant in all the mountain-regions, and may even be found among the rocks of Monte Pellegrino and Aguzzo (near Palermo), where it breeds." Lord Lilford found it resident and very abundant in Corfu and Epirus, as in all parts of the Mediterranean shores which he has visited. According to Von der Mühle it is common on the rocky hillocks of the Morea and on the islands of Greece. Lindermayer also says that it is common and resident in Greece, but denies that it is found on the islands, as stated by Von der Mühle, whose authority, he says, is only the sportsmen who shoot there, he himself never having visited the islands. On this point, however, some additional information has been given by Dr. Krüper, who writes:—"The Blue Rock-Thrush is not rare on Naxos, in the rocky mountains, and on many cliffs by the sea, where it breeds. I obtained several eggs. Far in the interior of the stalactite cave of Naxos I found a nest containing three young birds. This pair appeared to breed there every year, as we found traces of the last year's nest." Mr. Robson, in a letter, observes, "This species seems to be accidental in Turkey, as I have only seen one bird."

Canon Tristram, in writing on the ornithology of Palestine, mentions it as "a very solitary bird, but resident in scattered pairs throughout the whole country, wherever there are rocks, through the year. It feeds at the water-edge on the sea-shore, on small crustacea, and is generally to be found among old ruins. Its nest was found by Mr. Cochrane and myself, with four eggs sat on, near the Lake of Galilee, on April 2nd." It would appear to be more common in Egypt in some seasons than in others, as some observers have pronounced it to be rather plentiful in suitable localities, whilst others have recorded it as rare. Captain Shelley gives

the following note:—"I frequently met with this species wherever there were rocks, except in Nubia, where I did not observe it, although I have no doubt that it is common there, as it certainly ranges throughout the entire length of Egypt, and breeds in the country." In Dr. von Heuglin's new work on the birds of North-eastern Africa will also be found an account of this species as follows:—"The Blue Thrush is a migrant in autumn and spring in Egypt, Nubia, Abyssinia, and Arabia, not so common as the Rock-Thrush, and probably not extending its range so far to the south; young birds are more often met with than adults. It may possibly breed in the north of those countries. It is often seen on palm-trees and acacias that stand singly, whereas the Rock-Thrush affects rocks, ruins, walls, and the desert country, and visits the roofs of country-houses and mosques. Both species appear unsociable, and live a sort of solitary life."

We have already stated our doubts as to the range of this species to the east; but it is quite certain that it extends into North-western India. We have seen specimens from Turkestan; and it was obtained by Dr. Henderson during his recent journey to Yarkand. He has given us the following extract from his forthcoming work:—"During the Yarkand Expedition the Blue Rock-Thrush was only met with in Ladak, and there only on the outward journey in June and July. Solitary individuals were seen throughout Ladak, west of Le, at Shergoe, and other places, near streams, and hopping about rocks. But in Dr. Cayley's garden at Le they were in considerable numbers, feeding on caterpillars on the poplar trees, and hopping about on the grass. None were met with on the return journey." Mr. Hume adds the following observations:—"Most probably they breed in Ladak. I have hitherto failed to find their eggs, both in the plains of India, which they desert as soon as the hot season sets in, and in the lower hills of the Himalayas south of the snowy range. It is curious that I obtained a specimen of this bird in May at Mount Aboo. Can it breed there?"

The following notes by Dr. Leith Adams also refer to the true Blue Rock-Thrush:—"India and Western Himalayas, Ladakh, and Chinese Tartary; solitary in its habits, shy. I never heard it utter the simplest note or song. There is great diversity of plumage in the sexes. Frequents dreary wastes and rocky places; often seen among the dykes and cairns raised by the natives of Ladakh for religious purposes. Food, insects." On an inquiry into the distribution of this bird and its allies throughout India and the more eastern countries, we found so much difference of opinion that more time than the periodical issue of the present work will allow us must be given to the subject. We have in preparation, however, at the present moment, a paper on these birds.

Canon Tristram, who has observed the present species in Palestine, has given the following account of its habits:—"Wherever stones crop above the surface, whether by the shore, on the hills, or especially among ruins, but always solitary. Rarely ever were a male and female to be seen together, I had scarcely expected to find it as I did, along with the Black-and-white Kingfisher on the coast, sitting among the surf-beaten rocks and feeding on sand-lice and shrimps. On two occasions I killed it from the shore, and had to wade into the sea to secure my specimen. Unsociable as it is, it yet frequents the dwellings of man, a taste for stonework evidently overcoming all other prejudices; but nowhere is it more thoroughly at home than among the ruins of a deserted and untrodden Roman city, like Gerash, Rabbah, or Gadara. The 'vomitoria' of the amphitheatres are exactly to its liking; and in the recesses of these it has its nest, the male

meanwhile perched on the top of an old column, and uttering his dolorous ditty. Mr. Cochrane and I took a nest, with four fresh eggs, on April 2nd, in one of the robbers' caves in the Wady Hamam, near the Sea of Galilee. The nest was conveniently placed on a shelf far in, without any attempt at concealment, and was like the nest of our Blackbird, with mud mingled with the straw, instead of a shell of cow-dung. This bird is with good reason believed to be the 'sparrow that sitteth alone upon the housetop' of the Psalmist. The young birds were fledged at the beginning of May. The eggs are a very pale blue, smaller than those of the Thrush." The same naturalist also writes:—"Few spots where there is any vegetation are without a pair of these shy and wary birds, who may be detected dropping, like a Wheatear, behind a rock in a ravine, or perched on the mud wall of a palm-grove, the male occasionally rising and hovering like a Lark at some height during his song, which is, however, more frequently chanted from the top of an isolated rock. It occasionally perches on bushes, and, as a songster, possesses organs of voice of not less power, compass, and variety than our own Song-Thrush." Mr. C. A. Wright, who has contributed so many capital essays upon the birds of Malta to 'The Ibis,' observes in one of these papers:—"It is a lover of rocky and solitary places, but not unfrequently approaches the dwellings of man; it is no uncommon occurrence to see it perched on the corner of some house, giving vent to its melodious but plaintive song, which it also often pours forth on the wing. It is most commonly met with in pairs on the south coast, where it breeds in the high cliffs. It also constructs a loosely formed nest in ruined buildings, in which case its progeny are sure to be taken by the country-lads, who find a ready sale for them in the town as cage-birds. The Blue Thrush becomes strongly attached to the locality in which it has been brought up, and seldom quits it. This affection is also shown in a state of captivity, and it rarely long survives removal to a new and strange place. Many instances of this kind have come under my notice. One is worth mentioning. When the new market in Valletta was opened, many of the market-people brought with them cages containing these birds from the old market, where they had been reared. One after another of the birds pined away and died, and in a few weeks not one survived the change of locality; yet they were fed by the same hand, and with the same description of food. Almost fabulous prices are sometimes given for a good songster. An instance is fresh in my memory of a noble lady who considered herself fortunate in securing one for £7 10s., as the owner was very loth to part with it; and two or three pounds is not an unusual price. The male nestlings may easily be distinguished from the females at a very early age by their blue wing-coverts. In confinement they are much subject to a disease of the feet, which generally proves fatal. The Maltese suspend a piece of red cloth and a cowry-shell in its cage, which they consider a certain specific against the evil eye." Near Pisa, Dr. Giglioli observes that "this bird, called by the Italians '*Passera solitaria*,' generally frequents old towers and church-steeple, and pours forth its glowing melody even from the top of the Verruca, a ruined mediæval fortress which crowns one of the highest summits of the Pisan range."

The accompanying short description is given by Baron von der Mühle, in his little essay on the ornithology of Greece:—"In its habits and song it much resembles the Chats. In summer it frequents the most inaccessible rocks, but in the late autumn comes to the towns, where it is common, and on the roofs seeks its food, singing continually, but is shy and manages to escape pursuit. The nest is difficult to find. One was shown to me which was built in a low bush

of *Cratægus pyracantha*, and plainly constructed of grass. They are tamed and sold to go to Turkey."

Mr. Howard Saunders writes:—"No matter how wild the locality, the Blue Rock-Thrush will always be your companion; and though very shy during the breeding-season, it is by no means so at other times, and I could often have shot specimens. But this I could never bring myself to do; and it would appear that the Blue Rock-Thrush exercises some influence over the otherwise unimpressionable natives; for I never saw one amongst the bunches of Thrushes &c. either in Spain or Italy. The eggs are difficult to obtain, both from the situation of the nest and from the habit this bird has of making several nests before finally deciding which it means to occupy. The young are prized for the cage, but not to the same extent as in Italy, Malta, and Greece, where fabulous prices are sometimes given for a good songster." Again he gives a note as follows:—"Although the Blue Rock-Thrush is always to be found about the Coliseum, the Baths of Caracalla, and, indeed, any large ruin, yet I never noticed a specimen in the market, in which respect my experience tallies with that of Dr. Sclater, as expressed in his list of Roman birds, published some years ago (*Zoologist*, 1854, pp. 4160-4164)."

For the following interesting account of the breeding of the Blue Rock-Thrush, we are indebted to our kind friend Major Irby:—"A pair nested in a hole outside the wall of my stable at Gibraltar, in June 1869. Five eggs were laid, which were hatched about the 20th. The nest was of small dried roots, and was very scanty. When the young were hatched I broke through the wall from the inside of the stable to the nest, making the hole large enough to admit a small cage, in which I placed the nest and young: over the inside hole I then hung an old coat so as to shut out the light from the inside, cutting a small slit in the coat, through which I used to watch the old birds feeding their young within six inches' distance. Both birds fed them, at intervals of not more than five minutes. The food consisted almost entirely of centipedes (*Scolopendræ*), with now and then a large spider or a bluebottle fly by way of change: where they could have found so many centipedes, I cannot imagine, as they are insects which lie hid all day under stones &c. The head, in which is supposed to be venom, was always bitten off, and the body so mangled as to be quite dead. Two of the five young died in the cage, from the old birds not being able to get at them. Of the other three only one attained maturity, living till October, when, to my great regret, he went the way of all pets. He was very tame, and of most engaging habits and disposition, in fact, what the Spaniards call 'simpatico.' In his younger days he was fed on soaked bread and bruised snails; later on he had more fruit. These birds are very difficult to keep any length of time; they will live a year in a cage, but seldom more, and should be fed with chopped liver. The Blue Thrush very often perches on trees, is at Gibraltar and Tangier frequently seen on the house-tops, and though generally observed on bare rocky ground, is sometimes found in wooded parts, if there are any high rocks; for instance, a pair nest at the first waterfall near Algeciraz, which is in the midst of a dense forest. I was unable to detect any migration of this bird, and believe it never changes its abode. It has a habit in the courting-season of flying out straight a little way from a rock, and then suddenly dropping with the wings half shut, like a Woodpigeon in nesting-time. The Blue Thrush is very fond of ivy-berries, as well as all fruit."

Lord Lilford writes:—"I found this species a delightful cage-bird, from its quaint manners

and sweet, low song. I had one here for more than five years, but I never could manage to keep the Rock-Thrush (*M. saxatilis*) for more than a few months. The Blue Thrush is very fond of figs, fresh or dried, but is one of the most omnivorous birds with which I am acquainted. Literally, fish, flesh, fowl, and fruit I have seen it devour with apparently equal gusto, to say nothing of almost any insect." In 'The Ibis' he states:—"A bird of this species, which I bought at Palermo, immediately attacked and devoured a Willow-Wren which came on board our yacht in a gale off the south coast of Sicily, in November 1856." Loche also remarks on its food:—"This bird feeds principally on insects, and destroys large numbers of grasshoppers; and only in want of these does it feed on berries and fruit."

Much has been said about the song of the present bird; and we add one more note from the pen of Dr. A. von Homeyer, who writes, under the date of April 14th, 1861:—"This afternoon I walked about the town of Palma, and was delighted to find that what I had so often heard of and read is really true. A Blue Thrush (*P. cyaneus*), sitting immovable on the top of the tower of the church, uttered its sweet song from thence. I remained there a full quarter of an hour, and strove, listening to its peculiar melody, to remain quite unbiassed as far as the Rock-Thrush (*P. saxatilis*) is concerned. It is quite true what I wrote (J. f. O. vii. p. 317), viz. that *P. cyaneus* is really a good songster, and not less so than *P. saxatilis*. It pauses, however, more, and its strophes are not so regular, and it repeats itself now and then, from which its song does not appear so good as that of *P. saxatilis*, though it is not less varied. The notes are very much alike, full, rich, flute-like." Mr. A. Basil Brooke remarks in a letter to us, "Their song is cheerful and loud, frequently uttered while they are on the wing, enlivening the rocky and wild gorges, which are their favourite haunts."

Mr. W. H. Hudleston has given an account of a nest he found near Mesolonghi:—"We discovered, on the 1st of June 1852, a nest of the Blue Thrush in a hole near the top of the largest stone, about 10 feet from the ground. The nest resembled the well-known one of *Turdus merula*, but was more loosely constructed and shallower. This, however, would arise from the bird having to accommodate itself to the shape of the cavity in which it was placed. The eggs are of a greenish blue, very delicate, and without any spots."

In Dresser's collection are two eggs of this bird obtained from Count Ernesto Turati, who took them in Lombardy. In colour they are pale blue, having a few scarcely perceptible red dots at the larger end, and in size measure $1\frac{4}{10}$ by $\frac{3}{4}\frac{1}{10}$ inch, and $1\frac{5}{10}$ by $\frac{3}{4}\frac{0}{10}$ inch respectively. Mr. A. Benzon, of Copenhagen, writes to us that "he has eggs of this bird collected in Greece by Dr. Krüper on the 8th June 1862. They measure 28·5 by 20, and 30 by 20 millims., are whitish blue in colour, with fine rust-spots, particularly at the larger end."

In the preparation of the above article we have examined the following specimens:—

E Mus. Sharpe and Dresser.

a, ♂. Nice (*W. Schlüter*). *b*, ♂. Piedmont (*Salvadori*). *c*, ♂. Monte S. Elia, Sardinia, January 17th, 1863 (*Salvadori*). *d*, ♂. Macedonia, November 2nd, 1869 (*Krüper*). *e*. Egypt (*Rogers*). *f*. Punjab (*C. H. T. Marshall*).

E Mus. H. E. Dresser.

a. Alexandria (*S. Stafford Allen*). *b.* Thebes, February 27th, 1862 (*S. Stafford Allen*). *c.* Malta, October, 1862 (*C. A. Wright*). *d*, ♀. Malta, autumn of 1866 (*C. A. Wright*).

E Mus. G. E. Shelley.

a, b, c, ♂, ♀. Egypt, March 9th and 12th, 1868 (*G. E. S.*).

E Mus. Lord Walden.

a, ♂. Turkestan (*Dode*).

E Mus. Howard Saunders.

a, ♂. Genoa. *b.* Granada (*H. S.*). *c*, ♀. Malaga, March 15th, 1871 (*H. S.*). *d*, ♂. Sierra Nevada, May 1871 (*H. S.*).

E Mus. H. B. Tristram.

a. Geneva, 1844 (*H. B. T.*). *b*, ♀. Malta, February 1st, 1858 (*H. B. T.*). *c*, ♂. Kef, East Algeria, March 27th, 1857 (*H. B. T.*). *d*, ♂. Gennesaret, March 5th, 1864 (*H. B. T.*). *e*, ♀. Marsaba, Judæa, January 15th, 1864 (*H. B. T.*).

E Mus. A. Basil Brooke.

a. Bordignera, Riviera, N. Italy, March 1869 (*A. B. B.*). *b*, ♂. Villacidio, Sardinia, April 22nd, 1871 (*A. B. B.*).

E Mus. W. Schlüter.

a, b, juv. ♂. Macedonia, August 22nd and 28th, 1870 (*Th. Krüper*). *c*, ♂. Macedonia, October 13th, 1869 (*Th. Krüper*). *d, e.* Italy. *f, g.* Switzerland.

E Mus. J. H. Gurney, jun.

a, b. Nice (*J. H. G.*). *c.* Algiers (*Richter*).

E Mus. Salvin and Godman.

a, ♀. Tunis, March 8th, 1857 (*O. Salvin*).

PETROCOSSYPHUS CYANUS.

APPENDIX A.

IN finishing our article on the present species we were unable, owing to the want of time, to give any satisfactory declaration as to its easterly range, and we were compelled to defer to a more leisure moment the consideration of a very important discovery, as we believe, in connexion with this subject. We have to express our thanks to the kind friends enumerated below, whose collections, placed most liberally at our disposal, have furnished the material from which the results mentioned in this article have been deduced. Briefly, then, we shall first state the conclusions at which we have arrived from a study of a splendid series of Blue Rock-Thrushes from all parts of the world inhabited by these birds; and we will then lay before our readers an analysis of the material examined, endeavouring to prove the correctness of our deductions in as concise a manner as possible. In Mr. G. R. Gray's 'Hand-list of Birds,' which, at the time we are writing, may be regarded as the standard work of reference for the general ornithologist (pt. i. p. 260), we find under his genus *Turdus*, in an unnamed section (no. 955), three species of Blue Rock-Thrush mentioned; and we may state at once that Mr. Gray is apparently right in considering that the Blue Rock-Thrush of Europe is not the type of the genus *Petrocossyphus* (if, indeed, this genus is really separable from *Monticola*); for Boie, in his original description (Isis, 1826, p. 972), only mentions *P. saxatilis* as the type of his genus, nor was it until two years later that he substituted *P. cyanus*. For the use of such of our readers who may be interested in the present discussion, we add the references to Mr. Gray's names, as follows:—

3805. *CYANUS*, Linn. Syst. Nat. i. p. 296 (1766).
solitarius, Lath. Ind. Orn. i. p. 345 (1790, nec P. L. S. Müller).
azureus, "Lebrun," Crespon, Faun. Mérid. p. 179 (1844).
cyaneus, p.
3806. *PANDOO*, Sykes, P. Z. S. 1832, p. 87 (♂).
maal, Sykes, loc. cit. p. 88 (♀).
longirostris, Blyth, J. A. S. B. xvii. p. 150 (1847).
affinis, Blyth, op. cit. xii. p. 177* (1843).
3807. *SOLITARIUS*, P. L. S. Müller, Natursyst. Suppl. p. 142 (1776).
manilla, Bodd. Tabl. Pl. Enl. p. 39 (1783, ex Pl. Enl. 636)†.
manillensis, Gm. Syst. Nat. i. p. 833 (1788, ex Pl. Enl. 564. fig. 2, et 636).
cyaneus, var. *d*, Bl.

We may without much question add *P. longirostris* of Blyth as a synonym of the ordinary Blue Rock-Thrush of Europe (n. 3805), and we regard the other titles as all belonging to one and the same species: in a word, we believe that there are only two species of *Petrocossyphus*, bearing respectively the names *P. cyanus* (Linn.) and *P. solitarius* (Müller); and we will give our reasons for this supposition. We are not sure whether we were the first to record in print the curious changes of plumage through which the Blue Rock-Thrush of Europe passes before it attains its fully adult dress, but we have never seen any account of it in any previous work, nor was it known to any of our ornithological friends; but those stages of plumage are allowed to be

† Mr. Gray likewise gives the name of *olivaceus* of Boddaert; but this does not seem to be referable to the present species. Boddaert founds his *Turdus manilla* on no. 636 of the 'Planches Enluminées,' but he makes no mention at all of, and bestows no title on, fig. 2 of no. 564, doubtless recognizing it as precisely the same as the bird figured in plate 636 (as is evidently the case). But fig. 1, the *Merle olive des grandes Indes* of Montbeillard, is named by Boddaert (p. 33) *Turdus olivaceus*.

most probably correct by all who have examined the birds with us. But as to the changes of dress through which we are about to prove that *P. solitarius* passes, we fear that for a little while some scepticism will exist, though we ourselves have no doubt as to their correct determination, and we are sure that every one who carefully examines an equally good series of Eastern birds as that now lying before us will come to the same conclusions. The synonymy of *P. solitarius* we believe to be as follows:—

PETROCOSSYPHUS SOLITARIUS.

(EASTERN BLUE ROCK-THRUSH.)

- Merle solitaire mâle de Manille*, Montb. Pl. Enl. iv. 636.
Merle solitaire de Manille, Montb. Pl. Enl. iv. 564. fig. 2.
Turdus solitarius, P. L. S. Müller, Natursyst. Suppl. p. 142 (1776, ex Montb.).
Turdus manilla, Bodd. Tabl. Pl. Enl. p. 39 (1783, ex Montb.).
Turdus manillensis, Gm. Syst. Nat. i. p. 833 (1788, ex Montb.).
Petrocincla affinis, Blyth, J. A. S. B. xii. p. 177* (1843).
Petrocincla manillensis, Cassin, in Perry's Exp. to Japan, p. 240 (1856).
Petrocincla violacea, Swinhoe, Zoologist, 1858, p. 6228.
Turdus (Monticola) erythropterus, Gray, P. Z. S. 1860, p. 350.
Petrocossyphus manillensis, Swinhoe, Ibis, 1860, p. 56.
Petrocossyphus affinis, Jerdon, B. of India, i. p. 512 (1862).
Petrocincla manillensis, Swinhoe, Ibis, 1862, p. 307.
Monticola erythropterus, Gray, Hand-l. of B. i. p. 260 (1869).

We hesitate to add to the above list of synonyms the name of *Turdus eremita* of Gmelin, which Mr. Blyth suggests may belong to this species, inasmuch as Gmelin's title is primarily taken from Latham's "Hermit Thrush" (Gen. Syn. ii. pt. 1, p. 54), which, again, is founded on the descriptions of Brisson's "*Solitaire des Philippines*" (Orn. ii. p. 272). The latter author gives a plate of the species (pl. 28. fig. 2), from which we should say that the figure in the 'Planches Enluminées' is derived, as is apparently Montbeillard's description (Ois. iii. p. 364) from the same source. The figure to which Montbeillard refers represents the bird with a yellow head and underparts that can hardly with the utmost latitude be reconciled with those of the immature *P. solitarius*. It must be admitted, however, that the description agrees better.

Nestling. Above ashy grey, mottled all over with spots of pale fulvous; wing-coverts, quills, and tail-feathers, as much as can be seen of them, blackish brown, with broad tips of pale fulvous white; under surface of the body more inclining to fulvous, each feather tipped with blackish, giving a mottled appearance; bill yellowish, inclining to brown along the edge of the upper and lower mandible; legs yellowish brown, with brown claws.

Obs. The nestling described above is in Mr. Swinhoe's collection, and was procured by him at Amoy. Although we have never examined a similar example of the nestling plumage of *P. cyanus*, it is evident, from the plate given by Bettoni, that both species must be remarkably similar at this early age.

Fully grown young male. Above dingy ash-colour, inclining to blue on the wing-coverts, lower scapulars, and rump; the forehead slightly tinged with fulvous, and the head and neck obscurely crossed with

blackish bars, which, however, are very indistinct; scapulars, as well as the lower back and rump, tipped with fulvous white, each feather having a narrow bar of black before the apical tip; least wing-coverts barred and tipped in exactly the same manner; median, greater, and primary coverts blackish brown, externally margined with bluish grey, and rather conspicuously tipped with white; quills blackish brown, externally margined with a narrow edging of ashy grey, all the feathers tipped with white; tail blackish brown, externally edged with ashy grey, inclining to bluish towards the base of the feather and to white at the tip; under surface of the body creamy white, with a slight rusty tint on most of the feathers; all the plumes plainly margined with blackish, producing a strongly mottled appearance; the lower part of the belly, flanks, and abdomen, as well as the under wing- and tail-coverts, more decidedly tinged with rusty, but also more plainly *barred* across with blackish, not scalloped as on the upper part of the breast.

Obs. The specimen just described is in the collection of Messrs. Salvin and Godman, received by them in exchange from the Leiden Museum. The original label states that it is a male, procured in Celebes by Von Rosenberg on the 27th of September, 1863. A female shot by the same collector on the 2nd of October is very similar, but has rather a clearer shade of rusty colour on the lower parts. A young female procured at Amoy on the 12th of September, 1859, is again similar, but is in rather better plumage, and seems to have a more distinct shade of blue on the upper parts, and the underparts darker and not so distinctly mottled. Two birds in Mr. Swinhoe's collection, obtained at Takow and Funghshan, in Formosa, in November and December 1865, agree exactly with the Celebean example first mentioned; they are females, and the latter is beginning to show a shade of blue on the hinder neck and upper part of the back, as also a slighter tint of deeper russet on the flanks and sides of the body. These are all the specimens which have come under our notice which are sexed and may positively be identified as young birds of the year: at once it is noticed that the young birds of *P. solitarius* do not show any advance to maturity in the autumn of the year in which they are hatched, while we know that the male of *P. cyanus* gets blue in his first autumn; so that there is a difference in the growth of the Eastern species at the outset. We have also before us two females lent us by Mr. Swinhoe, who collected them himself at Funghshan in January 1866, and Amoy in April of the same year. As might be expected, no difference is exhibited by the first-named specimen, which is in the full winter plumage of the young bird; but the second has more blue on the back, and the mottling on the breast is certainly more obscure, that is to say, the edgings to the feathers are not nearly so distinct on the breast, which loses somewhat of its previous scalloped appearance. There, we regret to say, ends our authentic history of the female of *P. solitarius*. If we may judge from the fact that a specimen killed as late as April shows no trace of approaching adolescence, we may suppose that, like *P. cyanus*, the female does not gain its adult dress so soon as the male, if, indeed, it ever gets out of the spotted plumage. We have little doubt that it does do this, and that it eventually becomes similar to the male, like its European congener, taking no doubt a longer time before its full change of plumage is completed, as does *P. cyanus*. Out of all the numerous specimens examined by us of the Eastern Blue Rock-Thrush, in the blue-and-red or whole blue plumage, not one is labelled female—all are marked males. As the question seems never to have been mooted before, and as all naturalists have supposed that the male was particoloured and the female spotted, we may be allowed to question the correctness of some of the determinations of these sexes, inasmuch as every collector, in the present state of our knowledge, would not hesitate to sex the birds as above, without any exact dissection of the specimen.

As regards the males, however, we are able to give more definite information; and the first specimen which we examine is a young bird in spotted dress, now in Lord Walden's collection. This bird was shot by Mr. Leopold Layard, in the Philippine island of Negros, in March 1871. It must be remembered that

Mr. Layard, who, previously to his visit to the Philippines, had only been working with his father, the well-known Mr. E. L. Layard, in South Africa, visited Negros with no previous knowledge of the ornithology of that part of the world, and consequently had no preconceived notions as to the difference of the male and female of *P. solitarius*. His notes, as may be seen in the account of his collection published by Lord Walden and Mr. E. L. Layard in 'The Ibis' for April 1872, are most carefully compiled, and the sexing of his specimens may be strictly relied on. This young bird is said by him to be a male; and we have not the slightest doubt ourselves of the complete correctness of this identification. It is an important piece of evidence in the present inquiry, because it confirms our statement made above, that the male of *P. solitarius* does not lose its spotted plumage in the first autumn like *P. cyanus*. Here is a bird of the previous year gaining its first spring plumage, for the remains of the winter dress are fast disappearing. A blue shade is coming on the whole of the upper surface, on the sides of the neck, and (though more faintly seen) on the throat and upper breast. Still more important, however, is a very visible change on the flank-feathers, which are turning to bright chestnut. Thus we have an indication of the plumage about to be assumed, viz. blue on the upper parts and on the throat, chestnut on the lower parts of the body. We are not sure whether the full blue-and-red plumage is assumed in the first spring, but we think that the male most likely loses his spotted dress entirely at this early season. The exact time may vary slightly in different localities; for Mr. Swinhoe procured a male specimen in Hainan, on the 11th of March, in full blue-and-red livery, with only a few traces of dingy edgings to the feathers of the head and back, the remains of winter plumage. On the other hand, two out of the three specimens procured by Mr. Henry Whitely at Hakodadi on the 17th of April, 1865, are in most beautiful full blue-and-red plumage, though the faint traces of mottlings visible on a close examination suggest that they had emerged from a spotted dress not very long before. The third specimen, a male, like the others, and killed on the same day, has plentiful remains of these scalloped markings on the breast and of bars on the back; and a fourth example, procured by Mr. Swinhoe in Formosa, in March 1866, is similar; so that it would appear that the full blue-and-red plumage is donned in the first spring. We now add a description of one of Mr. Whitely's Japanese specimens, all of which are at present in Lord Walden's collection, to give an illustration of the male in what we take to be his second plumage.

Adult Male in first summer. Above bright cobalt-blue, more brilliant on the head and face, with a few very tiny black specks in the centre of the back, being the remains of young plumage; least wing-coverts blue, exactly like the rest of the back; the rest of the upper wing-coverts black, edged with bright blue and tipped with white; quills black, very narrowly edged on the outer web with bright blue, the inner feathers narrowly margined with white at the tip; tail entirely black, feathers washed with blue on the outer web, more especially towards the base, and very narrowly tipped with white; entire throat and fore part of the breast bright cobalt; rest of the under surface of the body bright chestnut, as also the under wing- and tail-coverts; on the lower breast are a few remains of whitish edgings to the feathers; the lower flanks and sides of the vent, as well as the thighs, bright cobalt; bill black; feet black; eye dark hazel. (*H. Whitely*, MS.)

Thus far the explanation of the changes of plumage in the Eastern Blue Rock-Thrush is tolerably simple; but we are now rather puzzled as to whether the male bird changes directly into a second autumnal plumage with scalloped markings on the throat as in the first stage, but having the back blue with white terminal cross markings, and the belly chestnut, also barred with white and black. The next stage of plumage through which the bird passes from the blue-and-red livery is into one entirely blue all over; and it is to fix the time when this final change takes place that we find it so difficult. We have before us no less than three specimens which, while exhibiting scalloped markings on the upper breast and throat, have the back blue with a few cross bars of white and black, and the whole head and neck washed with dingy brown, apparently only the winter dress. The belly is chestnut, with cross

markings of black and fulvous white in alternate transverse lines on each of the feathers, and on several of them is seen a very distinct appearance of blue. This we are unable to account for, as on none of these specimens is an exact indication of the time when they were obtained. They bear a label of Mr. Swinhoe's, "S.-W. Formosa, 1861." If we may judge from a paper on Formosan Ornithology by Mr. Swinhoe in 'The Ibis' for 1863 (p. 274), he appears to have been in the south-western part of the island in the autumn of 1861. In this paper he says:—"The female retains the mottled plumage through life; but the young male in the first autumnal moult shows a good deal of blue on the back and throat, and red on the lower parts: the plumage becomes more defined in the following spring; but the mottles do not entirely disappear till the close of the second year, and often not then." The absence of a date on the labels of these peculiarly marked individuals prevents us from hazarding any opinion as to their probable age; but we do not believe that they are birds of the year. Another male specimen, procured at Takow, in Formosa, in October 1865, is in the plumage that we should expect to find in the bird of the second year. It is in ordinary blue-and-red dress, with remains of scalloped markings on the breast and of the usual bars on the rest of the body. Whether these marks are the remains of young plumage, or are the commencement of a second winter dress, we must leave to the observations of Mr. Swinhoe on the birds in a wild state to discover. We give further remarks on some of the Formosan specimens in our analysis of the material examined further on. It is sufficient for our present purpose to trace the bird through its several stages, from the spotted dress to the blue-and-red; and we have now seen that a blue shade is beginning to overspread the abdomen. The next specimen we describe is one in Mr. Swinhoe's collection, from Amoy, unfortunately without any exact date attached.

Adult Male assuming the entire blue plumage. Entire upper surface of the body cobalt-blue, more brilliant on the head and rump; throat and upper part of the breast also blue, more dingy on the latter, but brighter on the throat itself; the wing externally washed with dull blue, with a very narrow white edging to the greater as well as the primary coverts and inner secondaries; rest of the under surface of the body pale chestnut, almost fading into orange; most of the feathers on the flanks and some in the centre of the belly blue, with slight remains of a whitish cross bar; under tail-coverts entirely chestnut, with a blackish tip to two of the outer feathers; under wing-coverts pale chestnut, shading into blue, most of them having already assumed the latter colour.

By this time our conclusion will be apparent to our ornithological readers, viz. that the Eastern Blue Rock-Thrush does not stop at the blue-and-red plumage, which is usually considered to be the fully adult dress, but continues to change, the belly becoming gradually blue, till at last it reaches a blue dress undistinguishable from that of its European ally. Besides specimens in the plumage just described, we have others with the whole of the under surface blue, excepting the under tail-coverts, and others entirely blue, with only a single feather tinged with chestnut, the last remains of the red belly. Many writers have commented upon the admixture of red and blue which they found in some of their specimens; and we hope that the change is now satisfactorily accounted for.

We next proceed to give a description of the specimens examined by us for the benefit of such students as shall take up the study of this species, and we hope that some competent field-naturalist, like Mr. Swinhoe or Mr. Hume, will be able to explain the exact mode in which the various changes are effected in succession, an almost impossible thing for the closet-naturalist to do, working at home and beset, in the present case, with the difficulties occasioned by the absence of dates to many of the most important specimens. Never, perhaps, was there a better illustration than the present of the good that can be effected by the united labours of field- and closet-naturalists. Working in England, we have been able to examine an immense series of specimens in our own cabinets and those of our friends; and this study has resulted in what we believe all ornithologists will agree to be an important discovery. Whether our detailed account of the progress to maturity is absolutely correct,

we leave to the researches of field-naturalists to confirm or disprove; but the ultimate results are assuredly so, and a careful examination of the bird in the wild state will show how they are effected, and so the truth will ultimately be elucidated.

EUROPE.

Southern France. Mr. J. H. Gurney, jun., has lent us a pair of *P. cyanus* from Nice. The female is in spotted plumage, but shows plentiful traces of blue on the back and also on the flanks; as the bird is in winter plumage, the blue shade on the head and back is obscured by the dusky ash-colour which is assumed at this season of the year. The male is nearly full-plumaged, being entirely blue with slight remains of whitish markings on the middle of the back and belly; a few remains of the dusky winter plumage are seen on the head. Another male in breeding-dress, from Nice, was received by us from Herr W. Schlüter, and formed the subject of our description in the foregoing article. We may add that in all these three specimens the tail is graduated, especially in the female, where there is a space of $\frac{1}{4}$ inch between the tips of the first and second feathers, and of $\frac{1}{16}$ inch between those of the second and third, the fourth being slightly the longest. They measure as follows:—Total length 8·8 inches, culmen 1·0–1·05, wing 4·7–5·0, tail 3·3–3·5, tarsus 1·15. It should be noticed that, by a misprint, the tail of the male in our original article is said to be 4·4 inches in length, instead of 3·4.

Switzerland. Canon Tristram has lent us a specimen procured by himself at Geneva in 1844, a male bird, very thickly scalloped on the under surface of the body with white edgings, these being less frequent on the back; a good deal of brown shading pervades the head. Two more specimens, sent us by Mr. Schlüter, are unfortunately, like Dr. Tristram's bird, undated. One of them, however, is in very interesting dress, having evidently been shot in the spring, when it is gaining the full blue breeding-plumage. The gradual disappearance of the ashy-brown margins to the feathers is well illustrated in this specimen. The measurements of these three Swiss examples are as follows:—Total length 8·4–9·0 inches, culmen 0·95–1·0, wing 4·6–4·95, tail 3·25–3·6, tarsus 1·1–1·15.

Italy. Our friend Count Salvadori has sent us a male, procured by himself in Piedmont, which much resembles the above-mentioned Swiss specimen. Other birds received from Mr. Schlüter are passing from the winter plumage into the spring dress, and they all prove clearly that the gradual disappearance of the white edgings to the feathers occurs in the young male on his assuming the breeding-dress. At this latter season the plumage of the head and chest obtains a silvery-blue lustre, which renders the bird rather brilliantly coloured, in comparison with the dingy appearance which the winter garb imparts to it. In addition to these examples, Mr. Howard Saunders has lent us a Genoese specimen in his collection, which is likewise just emerging from the winter dress, of which plentiful remains are seen; the cross markings on the back and on the breast are very obscure, indeed nearly obsolete. By far the most interesting specimen that we have yet examined of the Blue Rock-Thrush has been submitted to us by Mr. A. Basil Brooke, who obtained it at Bordighera, in the Riviera, in March 1869. It is evidently an old female emerging from the mottled plumage into the full blue dress. Traces of the ashy-brown shade of the winter plumage are visible on the upper surface of the body, which is otherwise entirely blue, with a few remains of obsolete white cross markings on the wing- and tail-coverts as well as the lower back and rump. On the under surface the mottled plumage is still apparent; but a blue shade is coming on the chin, sides of the neck, and has almost taken possession of the rest of the lower surface of the body, especially the under wing-coverts. This bird clearly shows the passage of the adult female from the mottled to the blue dress. Considerable variation as to the graduation of the tail is seen in these specimens; for though in most of them it is nearly square, the Bordighera female has it very conspicuously graduated. Total length 8·2–9·0 inches, culmen 1·0–1·05, wing 4·6–4·9, tail 3·3–3·5, tarsus 1·15.

Sardinia. To the kindness of Count Salvadori we owe a specimen collected by himself in Sardinia on the 17th of January 1863. The bird is a male, and is already beginning to show signs of the approaching spring dress by the appearance of silvery blue on the head and chest. Only the very faintest trace of white edgings

can be detected on the upper surface; but on the lower side of the body these are pretty thickly distributed; they are, however, very dull and obscure. Total length 8·0 inches, culmen 1·0, wing 4·9, tail 3·5, tarsus 1·15. Mr. Basil Brooke has also lent us a male killed by himself at Villacidio on the 22nd of April 1871. It is in complete breeding-attire, and the only remains of white edgings, which are of course nearly obsolete, are on the lower flanks and under tail-coverts, and a few on the sides of the body. Total length 8·9 inches, culmen 1·0, wing 4·8, tail 3·5, tarsus 1·15.

Spain. Mr. Howard Saunders has lent us three specimens out of his collection, one of them from Granada, being a male of the previous year in full winter dress. The other two birds are most interesting. One from the Sierra Nevada, shot in May 1871, is in complete breeding-plumage, with a clear blue lustre on the head, throat, and even on the lower back and rump, without a trace of a single white edging to the feathers anywhere; evidently a very old bird. The other is a female from Malaga, and is another specimen by which we were able to trace the progress from a spotted to a blue stage of plumage. It bears the date of the 15th of March 1871, and retains a great deal of its winter dress; on the interscapular region are some whitish edgings to the dorsal plumes, as also on the tips of the wing-coverts, quills, and also of the tail-feathers. The under surface of the body is spotted and mottled with black and fulvous cross markings; but the feathers of the chest and flanks are fast becoming blue, which colour is also to be observed on the whole of the upper surface, brighter on the lower back and rump. Total length 8·6–9·0 inches, culmen 1·0–1·1, wing 4·8, tail 3·5–3·6, tarsus 1·15.

Malta. We have seen three specimens from this island, all of them hen birds. One obtained by Canon Tristram himself on the 1st of February, 1858, is remarkably brown all over the body, the breast, in fact, rather inclining to rufous; and the under tail-coverts are more particularly of this colour. One of the birds sent us by Mr. Wright has already been mentioned: it was obtained by him in the autumn of 1866, and looks to us like a female of the previous year that has bred in the spotted dress; all the feathers are much worn and abraded, and the brownish mottlings of the under surface all but obsolete. Another specimen, however, obtained by Mr. Wright in October 1862, and also in Dresser's private collection of Thrushes, seems to be a female of the previous year that has bred and completed her moult. With a few whitish edgings to the scapulars, wing-coverts, and rump, it possesses very little blue lustre on these parts, being for the most part brown above; on the under surface, however, we cannot help noticing the contrast in the colouring of the breast and abdomen. The latter is very distinctly marked with crescent-shaped bars of blackish, while the throat is spotted and mottled with fulvous and brown, and the chest is almost uniform greyish brown with mottlings of darker brown, thus forming a kind of gorget. These three hen birds measure as follows:—Total length 8·7–8·9 inches, culmen 1·0, wing 4·5–4·7, tail 3·3–3·5, tarsus 1·15.

Northern Africa. We have examined an Algerian specimen in the collection of Mr. J. H. Gurney, jun. It is a mottled female in winter dress, but exhibits no peculiarities of plumage worthy of notice. Canon Tristram's collection contains a male bird shot at Kef, in Eastern Algeria, on the 27th of March 1857, which is nearly in full breeding-plumage; and Messrs. Salvin and Godman have a female in complete blue livery shot by Mr. Osbert Salvin himself in Tunis, on the 8th of March in the same year. This is a very important specimen, as, being carefully sexed by Mr. Salvin, it first led us on to the inquiry as to whether the female really did ultimately get blue all over, a fact we have now been able to establish. Total length 8·6–9·0 inches, culmen 1·0–1·05, wing 4·8–5·1, tail 3·5–3·6, tarsus 1·15.

Greece. Four specimens are now before us from Macedonia, collected by Dr. Krüper in October and November 1869 and in August 1870. One of the latter, which is changing from the spotted nestling-plumage to the blue dress of the male, has already been noticed. This bird was killed on the 22nd of August; and another one shot on the 28th of the same month has fully completed his moult. Total length 8·6–8·9 inches, culmen 0·9–1·1, wing 4·8–4·9, tail 3·5–3·6, tarsus 1·15.

Palestine. Canon Tristram's collection contains two specimens from this country. The male bird shot on the 5th of March, 1854, is in full breeding-plumage, whereas Captain Shelley's Egyptian examples, though

killed some days later, have plenty of the brown winter dress still remaining. The hen bird, however, from Palestine is one of the most interesting specimens we have yet examined; and by this bird we have been enabled to trace the first development of the mottled plumage towards a blue dress. It was shot at Marsaba, in Judæa, on the 15th of January 1864, and is apparently in the usual mottled plumage of the immature female, with a slight bluish shade on the lower back and wing-coverts; but on the head there is one blue feather, showing that the bird would at least have attained to a partially blue livery in the ensuing spring. Total length 8·7–8·9 inches, culmen 1·05, wing 4·7–4·8, tail 3·4, tarsus 1·15.

Egypt. In our own collection we have three specimens from this locality,—one collected by Mr. Rogers during the visit of the Rev. O. Pickard Cambridge to that country, and two from Dresser's private collection, given to him by the late Mr. S. Stafford Allen; about these specimens there is nothing particular to remark. Captain Shelley has lent us three specimens out of his collection, obtained on the 9th and 12th of March 1868. Two are males, and one is a female in mottled plumage; the former are only just beginning to lose their winter dress. Total length 8·4–9·0 inches, culmen 1·05–1·1, wing 4·8–5·1, tail 3·2–3·5, tarsus 1·1–1·15.

AFRICA.

Abyssinia. Since we wrote our article on the Blue Rock-Thrush, we have received two specimens from North-eastern Africa, the only part of the Ethiopian Region visited by the species. One of them has been lent to us by Captain Sturt, who obtained it during the Abyssinian Expedition; it is emerging from the winter dress, as already signs of the coming brilliant blue are apparent on the head and throat, a few remains of white cross markings being apparent on the lower parts of the body and also on the centre of the back. The other example was recently sent to Sharpe by M. Jules Verreaux, and is now in his collection of African birds. Not only is it in full winter dress, but it is thickly covered both above and below with cross markings of dingy brown and narrow bars of black, some of the feathers also having a whitish tip. This looks as if the specimen were a young bird of the previous year in its first winter dress; and it is much to be regretted that no date is attached to the label, whereby we might determine the age of this bird, which is in rather interesting plumage. Total length 8·3–8·5 inches, culmen 1·0–1·05, wing 4·6–4·85, tail 3·2–3·4, tarsus 1·1–1·15. The younger bird is the one which has the smaller measurements.

ASIA.

Central Asia. A male specimen from Turkestan, in Lord Walden's collection, belongs to the European species. It is in perfect breeding-plumage, and measures as follows:—Total length 8·4 inches, culmen 1·0, wing 4·7, tail 3·3, tarsus 1·15.

India. Although to the eastward of the Indian peninsula the Blue Rock-Thrushes are easily determinable, there is a vast amount of difficulty in making out correctly the specimens from different parts of India; and the reason of this confusion will best be understood by giving a history of the species in that country. In his list of the birds of the Deccan (P. Z. S. 1832, p. 87), Colonel Sykes described his *Petrocincla pandoo* as distinct from the Blue Rock-Thrush of Europe in the following terms:—"This bird differs from the *Solitary Thrush* of Europe (*Turdus cyanus*, Linn.) in its smaller size, slighter form, brighter cærulean tint, want of orange eyelids, and white tips to the feathers." On the next page (*l. c.* p. 88) he describes another species as *P. maal*, which he seems to consider may be the female of the foregoing *P. pandoo*; and in this he is certainly correct. Next, Mr. Blyth, in the 'Journal of the Asiatic Society of Bengal' (xi. p. 460), after giving the synonymy of *P. manillensis*, with which he unites *P. pandoo* and *P. maal*, writes:—"Accordingly this species would extend to the Philippines, Tenasserim, and peninsular India; but I am not yet certain that the Indian bird has ever any rufous on the underparts." After giving a description of a bird from Luzon in blue-and-red plumage, he compares with it a specimen from Tenasserim, "minutely agreeing in all other respects;" but it "has the feathers of the upper parts less bordered, the axillaries and under surface of the wing have merely a few slight traces of the rufous colouring, which is replaced by cyaneous, the large under tail-coverts are partly

of this latter hue, which is also considerably developed on the abdominal feathers, and almost wholly supersedes the rufous on the flanks. Another specimen from Tenasserim has but a very slight trace of rufous left towards the vent and bordering the under tail-coverts, being elsewhere wholly cyaneous, excepting the dusky black of the large wing- and tail-feathers, and the tips of some of the wing-coverts, which are whitish. Finally, the Chyebassa (Central India) specimen is totally devoid of any rufous trace whatever, but has most of its clothing-feathers slightly dusky tipped, with minute pallid extreme tips, in which condition of plumage it accords with *P. pandoo*, Sykes." Mr. Blyth further proceeds to make remarks on the female; but we cannot enter into considerations of this sex, believing as we do that its history is not clearly worked out, and must be made the subject of a series of careful observations in the field. About the specimen from Luzon there can be no question; for, as Mr. Blyth justly observes, it is the true *Turdus manillensis*, Gm., i. e. *P. solitarius* of the present article. His Tenasserim specimens are the same bird, the first described being in a transitional state from the blue-and-red dress to the fully blue garb; the second being still further advanced, and retaining but slight traces of the rufous plumage on the abdomen. In sending to the same journal a little later (xii. p. 182) some critical remarks on his paper published in the previous volume (*l. c.*), Mr. Blyth makes some further remarks on these species:—" *Petrocincla manillensis*, auct., and *P. pandoo* aut *maal* of Sykes. The birds referred to under these denominations are most puzzling; and I am now inclined to suspect that three, if not four, closely allied species will eventually prove to inhabit South-eastern Asia and its islands. In *loc. cit.* I have described a male from Luçonia, which is unquestionably the *Turdus manillensis*, Gmelin, while there is every reason to presume that *T. eremita*, Gmelin, refers to its female, as *Petrocincla maal* of Sykes is the female of his *P. pandoo*." Mr. Blyth then gives a careful description of two specimens from Macao, comparing the male with his Luzon example; and he sums up as follows:—" Upon full consideration I consider the Chinese and Philippine-Island specimens to be of the same species, or *Petrocincla manillensis* vera." This conclusion is undoubtedly correct. Then he proceeds (and here his remarks are most important):—" A second species appears to exist in the specimens from the Tenasserim provinces; and to this I refer a fine male from Darjeeling, where the collector lately employed by the Society never obtained more than this one example. Judging from the Darjeeling specimen (for those from Tenasserim have the tail imperfect) it would appear readily distinguishable from *P. manillensis* by the shape of the tail, which (instead of being squared) has its outermost feathers nearly half an inch shorter than the middle ones. The mottlings of the upper parts are nearly obsolete, and those of the lower parts but little more developed; and there would appear to be generally some trace of ferruginous, more or less; in the Darjeeling specimen this is confined to the lateral margins of two or three of the lower tail-coverts; and successively more developed in two from Tenasserim, as formerly described by me. I shall designate this presumed species *P. affinis*. The third form is *P. pandoo* from Hindoostan, which would appear to have never any rufous whatever, and has the tail intermediate in shape to those of the two preceding." The Darjeeling bird mentioned by Mr. Blyth in the above paragraph is another *P. solitarius* in nearly full blue dress. In a subsequent article (J. A. S. B. xvi. p. 150) Mr. Blyth describes a new species from N.-W. India as *P. longirostris*. "This species," he says, "I only know from a female, presented to the Society by Captain Boys, who procured it on the march from Scinde to Ferozopore." In a footnote he adds:—"Can this be *P. cyanea* of Europe? Lord A. Hay has procured a species in Cashmere, which he thinks is the European one; and various other European birds occur there, as *Corvus monedula* and *Coracias garrula*, which (as his Lordship informs me) abound in the valley of Kashmir." Subsequent specimens have confirmed the fact that the bird from these parts is *P. cyanus*; and Mr. Blyth himself has long ago acquiesced in this decision. In this same paper he gives the range of the eastern *Petrocossyphi* as follows:—1. *P. affinis*, Blyth: rare at Darjeeling; but common along the eastern side of the Bay of Bengal, from Tipperah and Aracan to the Tenasserim provinces. 2. *P. pandoo*, Sykes: inhabits Central, Western, and Southern India. 3. *P. manillensis* (Gm.): inhabits the Philippines and China. Latterly Mr. Blyth's faith in the species *P. affinis* somewhat wavers; and the last stage of the controversy has been well set forth by Dr. Jerdon in the 'Birds of India' (i. p. 511):—"Colonel Sykes separated the Indian

Rock-Thrush from the European one, and in this is followed by Horsfield in his catalogue. Blyth united them in his catalogue, but subsequently described a *P. longirostris* from Cashmere, which he has since referred to the European race *P. cyaneus*; and on carefully examining specimens from Europe with Indian ones of *P. pandoo*, in company with Mr. Blyth, we agreed that these could not be separated. Indian specimens are apparently deeper blue; but this may depend on season, this bird being only a winter visitant in India; and though, in some specimens, the bill is shorter than in those from Europe, yet others with equally long beaks are met with. Mr. Blyth has lately also joined both his *P. affinis* from Darjeeling and Burmah and *P. manillensis* from China and the Philippines to the European species, making the following varieties:—a. *P. longirostris*, Bl., from Cashmere and Afghanistan, precisely the same as the bird from Europe; b. *P. pandoo*, Sykes, from Western and Southern India; c. *P. affinis*, Bl., from Sikkim, Lower Bengal, and Burmah; d. *P. manillensis*, auct., from China and the Philippines. In deference to Mr. Blyth's matured opinion, I have put *P. affinis* as a synonym of *P. cyaneus*; but I cannot do the same with *P. manillensis*, and I am in great doubts about the affinity of *P. affinis*. It generally has the blue more vivid than in *P. cyaneus*, the dusky markings being less developed; there is generally more or less deep ferruginous here and there, sometimes on the rump*, and occasionally in the lower plumage, and the outer tail-feathers are generally shorter than the penultimate pair. The female, too, is generally more tinged with blue above, and the ground-tint of the lower parts is more rufescent than in the female of *P. cyaneus*. The young bird has the light markings of the nestling plumage much more white above, and more rufescent beneath. Mr. Blyth was first led to change his previous opinion of the diversity of these two races by shooting two birds in Burmah, in succession, upon the same tree, on the following day, close under a deep rock-cutting, one of which had the outer tail-feathers shorter, the other not, and which he would have referred respectively to *P. affinis* and *P. cyaneus* if he had received them from different localities. It will be observed that, of these races or varieties, each race occupies a peculiar range of longitude:—*P. cyaneus* (with *P. pandoo*) on the west range, without any admixture of rufous; *P. manillensis* on the extreme east, with the whole abdomen chestnut; and *P. affinis*, between the two, sometimes with, sometimes without, any rufous. When specimens in summer plumage from various points along the north of Asia have been compared, perhaps a more correct judgment will be obtained of the distinctness or otherwise of these races. Is it possible that *P. affinis* can be a fertile hybrid between *P. manillensis* and *P. cyaneus*? We are inclined to agree with Dr. Jerdon and Mr. Blyth in believing that *P. pandoo* is not separable from *P. cyanus*, which seems to come to India in the winter and range down the western coast. In the same manner does *P. solitarius* find its way from the east in winter, when it occurs in the Himalayas, near Darjeeling, again in the neighbourhood of Calcutta, extends down the Malayan peninsula, and doubtless inhabits at this season of the year all the islands of the Indo-Malayan subregion, as it has been traced into the Austro-Malayan subregion as far as Gilolo and Ternate. The great question for solution is, therefore, whether the ranges of the two species, converging upon the Indian peninsula in winter from the east and west, ever really coalesce, and if so, where.

We have now before us nine specimens from different parts of India. One from the Punjaub, given us by Captain C. H. T. Marshall, seems to be in all respects identical with European examples, and measures as follows:—Total length 8·6 inches, culmen 1·0, wing 4·7, tail 3·3, tarsus 1·15. Lord Walden has a specimen in his collection from Candeish, also apparently referable to *P. cyanus*, and measuring:—Total length 9 inches, culmen 1·1, wing 4·7, tail 3·4, tarsus 1·15. Both these specimens are in full blue garb, and appear to be nearly in complete breeding-plumage, retaining only a few obsolete whitish edgings on the abdomen. In Dresser's collection of Thrushes are three skins sent by Mr. W. E. Brooks from Etawah, where they were procured in December and January; they appear to be all males of the year in winter plumage. Total length 7·9–8·2 inches, culmen 0·95–1·0, wing 4·6–4·8, tail 3·4, tarsus 1·05. Another specimen in Lord Walden's

* This we cannot quite make out. None of our specimens ever had a trace of this colour above, and it is evidently a misprint.—S. & D.

collection, procured by the late Captain Beavan at Umballah, in November 1866, gives the following dimensions:—Total length 8 inches, culmen 0·97, wing 4·6, tail 3·2, tarsus 1·05. These birds are all very small, and appear to belong to a small race of *P. cyanus*, unless they are *P. solitarius*, which here reaches its utmost western limit. Pains should be taken by future observers in the above-mentioned localities to see whether they ever get birds with remains of rufous on the abdomen; for all these four are in blue dress. The chief peculiarity seems to be the short tarsus, which is less than the shortest one among the European specimens examined. Lord Walden has lent us a Darjeeling skin in blue plumage, but evidently in complete winter dress; for, in addition to the ashy-brown shade spread over the head and neck, it has the usual black and white margins to the feathers of the back and the belly. The throat and upper breast are very thickly scalloped, as in the young spotted stage, a phase of plumage difficult to account for, unless our surmise is correct, that the Eastern species, after breeding in the blue-and-red livery, changes in the ensuing winter into an scalloped under dress, and during that time a gradual passage of the abdominal plumage from red to blue takes place. Captain Elwes has kindly sent us an individual in wholly blue garb, and exhibiting only slight remains of the winter plumage, a few of the mottlings on the throat being still apparent. Another bird, obtained with the foregoing at Darjeeling in the winter of 1869–70, agrees very well with the Philippine example which we considered to be the young of *P. solitarius*, but does not exhibit nearly so much rufous on the under wing- and tail-coverts, and has decidedly more of a blue shade overspreading the flanks, on which we cannot discover the slightest approach to a rufous abdomen. The colour of the bill is brown, inclining to a yellowish brown on the lower mandible; and this seems to indicate that it is an immature bird. Total length 7·7 inches, culmen 0·85, wing 4·5, tail 3·2, tarsus 1·05. The other two Darjeeling birds measure as follows:—Total length 7·5–8·0 inches, culmen 0·9–0·95, wing 4·7–4·8, tail 3·3–3·35, tarsus 1·0. It is difficult to say whether the birds from Darjeeling are really *P. solitarius*, as they are in full blue plumage: they seem to be smaller than the average of *P. cyanus*; and the Etawah birds point to the existence of a small race, which would probably be the true *P. pandoo*.

Assam. Two specimens from this country, in Lord Walden's collection, are in immature dress, similar to Captain Elwes's Darjeeling skin. Total length 8·4 inches, culmen 1·0, wing 4·4–4·7, tail 3·3–3·4, tarsus 1·1.

Burmah. Mr. Swinhoe possesses four specimens, sent to him by Mr. Blyth as *P. affinis*; and on the labels Mr. Blyth draws attention to the square tail of one of the birds, which, for that reason, he refers to *P. pandoo*. It is a curious fact that we have not yet seen a single specimen from Burmah or any part of Eastern India with a trace of rufous upon it, and we cannot therefore determine the question whether our specimens belong to a small race of *P. cyanus* or are only the full-plumaged *P. solitarius*. Two of Mr. Swinhoe's Burmese birds are in spotted dress, and on one of them a blue feather is shooting on the hinder part of the neck, which seems to prove that it is about to assume a blue upper plumage by a partial or entire moult. The other two birds are in full blue livery, with a great many cross markings on the breast and belly—in fact resembling exactly Lord Walden's Darjeeling specimen. Total length 7·3–8·0 inches, culmen 0·9–1·0, wing 4·4–4·7, tail 3·1–3·4, tarsus 1·05–1·1. Lord Walden has five Burmese birds in his collection, four in blue and one in spotted dress. They all look bigger than the other specimens in Mr. Swinhoe's cabinet, but there can be no doubt that much of this apparent difference is caused by the making-up of the skin. Two of the blue-plumaged birds are in nearly full breeding-dress, the other two having signs of winter plumage, especially one shot at Moulmein in October 1865 by the late Captain Beavan. They measure as follows:—Total length 8·0–8·5 inches, culmen 0·9–1·0, wing 4·6–4·8, tail 3·2–3·4, tarsus 1·1.

Malacca. Lord Walden possesses two specimens obtained by the late Dr. Maingay in this country. One is an immature bird, with a great deal of blue all over the upper parts and also on the flanks. The throat and breast are mottled; but we cannot see a trace of approaching rufous on the belly. In the absence of any information as to sex and date of capture, this specimen is one which we are unable to determine satisfactorily. It is evidently immature, from the shape and colour of the beak, which is brownish; and it does not differ from the Philippine bird first described, except in the stronger shade of blue on the flanks, and in the entire absence

of approaching rufous on these parts. Total length 7·7 inches, culmen 0·9, wing 4·2, tail 3·5, tarsus 1·05. Another specimen of Dr. Maingay's collecting bears date December 5th, 1865, and is altogether in very interesting blue-and-red plumage. As might be expected from the date at which the bird was obtained, it is in winter dress, that is, all over the back there is the ashy-brown shade characteristic of the plumage at this season of the year, though on the crown the disappearance of some of these dusky edgings causes the brighter blue of the approaching spring livery to show. So much for the upper surface of the body. On the under-side, the throat and breast are blue, the latter plentifully crossed with thickly lying margins of blackish, with a narrow edging of dull white; the belly chestnut, with whitish margins to the feathers, these being, like the dusky edgings of the breast, signs of the winter dress. All over the belly the approaching blue shade, which is to overspread and render uniform blue the entire under surface of the body, is apparent. This specimen seems to prove, beyond a doubt, that which we have hinted at before, viz. that after the bird has attained its beautiful blue-and-red livery it again passes into a winter plumage, distinguished as before by dusky margins to the feathers, which produce a somewhat mottled appearance, and that during this second, or it may be third winter, the blue abdominal plumage begins to be assumed. This last specimen measures as follows:—Total length 8 inches, culmen 1·0, wing 4·75, tail 3·3, tarsus 1·1.

Celebes. The two specimens which we have before referred to, in the collection of Messrs. Salvin and Godman, measure as follows:—Total length 8·5–9·0 inches, culmen 0·95, wing 4·65–4·7, tail 3·3–3·4, tarsus 1·1.

Philippines. From this locality the species was first described, and a figure of it in blue-and-red plumage is given in the 'Planches Enluminées.' We have only seen one specimen, and that is the young bird to which we have so often referred in the course of this essay,—a most important specimen, as exhibiting the first approach of a rufous belly from a spotted plumage. Total length 8·5 inches, culmen 0·95, wing 4·65, tail 3·4, tarsus 1·1.

Hainan. Mr. Swinhoe only possesses one specimen from this island, in which he was the first European naturalist to place a foot. It is a male, procured on the 11th of March, 1866, in complete blue-and-red plumage, exhibiting remains of winter dress only on the head, where there are a few faint traces of dusky margins. Total length 7·6 inches, culmen 0·95, wing 4·7, tail 3·1, tarsus 1·15.

Formosa. We have quoted (*suprà*, p. 5) Mr. Swinhoe's remarks as to the species in Formosa. We have before us no less than eleven specimens collected by him in that island. Five are in spotted plumage, these being considered by Mr. Swinhoe to be females. The dates attached to three out of the five are November and December 1865, and, according to our account of the changes of plumage in this species, would be young birds of the year. They measure:—Total length 7·2–8·0 inches, culmen 0·85–1·0, wing 4·3–4·6, tail 2·8–3·3, tarsus 1·05–1·1. Of the six birds in blue-and-red plumage there are two killed in March, which have remains of the mottling on the throat, and, according to our explanation, would be immature males in their second spring. Two more, killed in October and November, have beautiful remains of this mottling, and would either be immature males in their second autumn, or perhaps the third. The other two are in winter livery, thickly covered with white edgings to the whole of the under surface, more thickly, indeed, than any which we have yet examined, and all the feathers on the abdomen are turning to blue, thus endorsing our belief that the whole blue plumage commences to be assumed in the winter after the bird has bred in the blue-and-red dress. No date attaches to these examples, which are in the collections of Lord Walden and Messrs. Salvin and Godman, and we think that Mr. Swinhoe cannot have had them before him when he refers to the constancy of the red belly in the Formosan specimens. Measurements as follows:—Total length 7·2–7·8 inches, culmen 0·9–1·0, wing 4·7–4·8, tail 3·0–3·2, tarsus 1·1.

China. In 'The Ibis' for 1862 (p. 307), Mr. Swinhoe writes:—"I have repeatedly shot specimens of *Petrocincla manillensis* without a tinge of ferruginous on the underparts, and undistinguishable from examples of *P. pandoo* received from Mr. Blyth; I cannot therefore help agreeing with that gentleman, in thinking that both of the so-called species may be referred to *P. cyanea*, the red tints of the belly and vent being probably

attributable to certain climatal causes, as is the case with the different varieties of *Cuculus tenuirostris*." Again, in 'The Ibis' for 1863 (p. 274), he continues:—"In Formosa you find *P. manillensis*, as it is generally known, with blue upper plumage and breast and red belly. In all my numerous specimens the colours are always uniform. But in Amoy the red belly is by no means constant; I have several skins entirely blue, and others again with all proportions of red and blue. This, however, does not seem to be the case with the Formosan bird; so we will not here discuss the validity of the species." As in the preceding paragraph reference is made to the species in Formosa, we need here only confine ourselves to the consideration of the bird from the mainland. First, we have two specimens from Tientsin, contained in Lord Walden's collection. One is a bird in spotted dress, the other is in full blue-and-red plumage, apparently killed in the late spring or early summer; for it has no trace of the dusky shade of winter, and has only slight remains of the mottled immature plumage on the centre of the throat and upper breast. The red belly is crossed with indistinct barrings of blackish, with a dull white edging, and on some of these bars a slight blue shade is observable in certain lights. They measure:—Total length 8·0–8·7 inches, culmen 1·0, wing 4·4–4·7, tail 3·0–3·2, tarsus 1·1. Mr. Swinhoe's well-known energy has provided us with a good series of skins from the neighbourhood of Amoy; and through the kindness of that gentleman we have examined all the skins in his own collection, and at the same time other friends have placed at our disposal several skins from this same locality. The seventeen specimens now before us form a complete guide to the history of the species. Beginning with the nestling, which we have fully described at the opening of the present discussion, we have also several in spotted plumage. Then we have, in the collection of Messrs. Salvin and Godman, one in blue-and-red livery, with remains of spotted plumage on the throat and breast (as in Lord Walden's Tientsin example); afterwards a male in Mr. Swinhoe's collection entirely blue, excepting the centre of the belly, which is faded chestnut, everywhere tinged with blue; the under wing-coverts are also fast becoming blue, but there is no change in the under tail-coverts, which are deeper chestnut, apparently not faded like the colour of the abdomen. The change from a red to a blue belly is evidently a gradual operation, and the under tail-coverts are the last part to succumb: thus the next specimen is blue all over, except these last-mentioned feathers, which are, however, about to become blue. Thence we have every gradation of blue on these parts, the rufous gradually becoming less and less till at last we have one all over blue, excepting the slightest tinge of rufous on one of the under tail-coverts. Even when the bird is finally mature it seems to go every year into a winter plumage exactly similar to that of its European congener, so that when in entire blue dress it is almost impossible to distinguish the two species. The birds in spotted dress measure as follows:—Total length 7·5–8·4 inches, culmen 0·95–1·0, wing 4·45–4·7, tail 3·1–3·5, tarsus 1·1–1·15; the more mature birds as follows:—Total length 7·8–9·0 inches, culmen 0·9–1·0, wing 4·5–4·9, tail 3·1–3·5, tarsus 1·05–1·2.

Japan. Lord Walden has kindly lent us the three specimens procured by Mr. Whitely at Hakodadi (*cf.* Ibis, 1867, p. 199), which are now in his possession. They are all males, and in very brilliant plumage, apparently brighter than any we have seen yet. One of them has remains of mottled plumage on the breast and of slight edgings on the head. Messrs. Salvin and Godman also possess a skin, received by them in exchange from the Leiden Museum; but this does not look so brilliant as Lord Walden's specimens, owing probably to its being in partial winter plumage; traces of blue are appearing among the red of the abdomen. These mature birds measure:—Total length 8·4–9·0 inches, culmen 1·0–1·1, wing 4·7–4·95, tail 3·2–3·7, tarsus 1·2. Our friend Mr. Robert Bergman procured a young bird at Nagasaki on the 1st of February, 1870, which is also now in Lord Walden's collection. It does not differ conspicuously in plumage from Chinese examples of the same age, and measures as follows:—Total length 8·6 inches, culmen 1·1, wing 4·7, tail 3·5, tarsus 1·2. The date at which this specimen was procured seems to indicate that the bird does not migrate from Japan; and, taking at the same time into consideration the exceptional brilliancy of the old birds, as well as their decidedly longer tarsus, which measures 1·2 inch in both old and young birds, it is possible that the Blue Rock-Thrush of Japan may yet turn out to be a different species.

SUMMARY.

Having taken some pains to analyze, though it is to be feared at the risk of wearying the reader, undoubtedly the best series of Blue Rock-Thrushes yet brought together, it only remains to add a few words in explanation of the results attained by the study of the birds in question. They may be briefly stated under the following heads, which seem to us to embody the conclusions at which we have arrived, and to set forth the points on which further investigation is necessary:—

1. There are apparently two species of Blue Rock-Thrushes, viz. *P. cyanus*, ranging along the south of Europe to Central Asia and into Western India in winter, and *P. solitarius* of Eastern Asia, extending from Japan in the north to China and Formosa, visiting in winter Burmah, Eastern India, the Malayan peninsula, extending to the Philippines and the Malayan region as far as Celebes and Gilolo.

2. There is a possibility of the existence of a third species, the summer habitat of which is unknown, but which visits India in the winter. It is smaller than *P. cyanus*, and may possibly be *P. solitarius* extending as far westward as Etawah, though we are unaware of any specimen being met with in that locality exhibiting a trace of rufous on the abdomen. This smaller race is probably the *P. pandoo* of authors.

3. *P. cyanus* never has any rufous on the belly at any period of its existence, but emerges gradually from a spotted dress to an entirely blue one, the female being much longer in attaining this than the male.

4. *P. solitarius* resembles *P. cyanus* generally in the spotted stage of the young, but proceeds next to don a bright blue plumage, with a rufous belly, *the latter gradually merging into blue*. Whether the female always remains in her spotted plumage, as has been stated, or ultimately gains a blue dress, remains a subject for further investigation.

5. *P. solitarius*, when in full blue plumage, is almost indistinguishable from *P. cyanus*. It seems to be a trifle smaller; but the following measurements show that there is no great difference in size:—

(1) *P. cyanus*: Long. tot. 8·0–9·0 inches, culmen 0·9–1·1, wing 4·5–5·1, tail 3·2–3·6, tarsus 1·1–1·15.

(2) *P. solitarius*: Long. tot. 7·2–9·0 inches, culmen 1·0–1·1, wing 4·7–4·95, tail 3·2–3·7, tarsus 1·0–1·2.

With these measurements may be compared the small Etawah and Umballah specimens (which we think may perhaps be referable to a distinct species, or subspecies, as

P. pandoo: Total length 7·9–8·2 inches, culmen 0·95–1·0, wing 4·6–4·8, tail 3·2–3·4, tarsus 1·05) and those of the Japanese specimens given above.

In the preparation of the above article we have examined the following specimens:—

E Mus. Lord Walden.

a. Candeish. *b*, ♂. Umballah, November 1866 (*R. C. Beavan*). *c*. Darjeeling. *d*, *e*. Assam. *f*, *g*. Burmah. *h*. Moulmein, October 1865 (*R. C. Beavan*). *i*, *j*. Tonghoo. *k*, *l*. Malacca (*Maingay*), Malacca, December 5th, 1865 (*Maingay*). *m*, *n*. Tientsin, China. *o*, *p*, ♂. Amoy, China, spring of 1861 (*R. Swinhoe*). *q*. S.-W. Formosa, 1861 (*R. Swinhoe*). *r*, *s*, *t*, ♂. Hakodadi, Japan, April 17th, 1865 (*H. Whitely*). *u*. Nagasaki, February 1870 (*R. Bergman*). *v*, ♂. Negros, Philippines, March 1871 (*L. Layard*).

E Mus. R. Swinhoe.

a, *b*, *c*, *d*. Burmah (*E. Blyth*). *e*, *f*, *g*, *h*, *i*, *j*, *k*, *l*, *m*, *n*, *o*. Amoy, China, from the 29th of October, 1857, to January 1867 (*R. S.*). *p*. Takow, Formosa, October 1865 (*R. S.*). *q*. Coloshan, Formosa, November 1865 (*R. S.*). *r*. Formosa, March 1866 (*R. S.*).

E Mus. H. E. Dresser.

a. Etawah, December 28th, 1868, December 3rd, 1869, January 1870 (*W. E. Brooks*). *b*, ♂. Amoy, May 1866 (*R. Swinhoe*).

E Mus. Salvin and Godman.

a, b. Amoy (*Mus. Lugd.*). *c.* Amoy, 1861 (*R. Swinhoe*). *d.* S.-W. Formosa, 1861 (*R. Swinhoe*). *e, ♂*. Camphor Hills, Formosa, March 1862 (*R. Swinhoe*). *f.* Japan (*Mus. Lugd.*).

E Mus. H. J. Elwes.

a, b. Darjeeling, Sikkim, winter of 1869-70 (*H. J. E.*).

E Mus. H. B. Tristram.

a. Amoy (*R. Swinhoe*).

Subfamily *CINCLINÆ*.Genus *CINCLUS*.

Sturnus apud Linnæus, Syst. Nat. i. p. 290 (1766, partim).

Turdus apud Latham, Ind. Orn. ii. p. 343 (1790, partim).

Cinclus, Bechstein, Orn. Taschenb. p. 206 (1802).

Hydrobata apud Vieillot, Nouv. Dict. i. p. 219 (1816).

Aquatilis apud Montagu, Orn. Dict. Suppl. (1813).

THE Dippers inhabit the entire Palæarctic Region where suitable localities (such as streams flowing through broken hilly country) occur, and they are likewise met with in the Nearctic Region as far south as Veragua. In the Western Palæarctic Region there are but three species, all of which are very closely allied. There has been no little difference of opinion as to where the Dippers should be placed in classifying the Passeres. Most authors place them very close to the true Thrushes; and in this I am inclined to agree with them. Mr. A. R. Wallace, in his classification of the Passeres, places the genus *Cinclus* after the Sylviidæ, between the Panuridæ and Troglodytidæ; whereas Keyserling and Blasius, on the other hand, place it near the Starlings, between the Certhiidæ and the Motacillidæ; but Sundevall, whose views are, as a rule, very sound, includes this genus in his Phalanx 1, Ocreatæ, placing it next to the true Thrushes. Judging from the habits and general appearance of the Dipper, it seems to me that it is a modified Thrush; and I have followed Sundevall in his views on the subject.

The Dippers are tolerably good songsters; unlike the Thrushes, however, they are not omnivorous, but exclusively insectivorous, feeding on various kinds of aquatic insects. They build bulky nests, which they place in a hole or under the ledge of a rock, always near water; and their eggs, usually from four to six in number, are pure glossy white.

Cinclus aquaticus, which appears to me to be the type of the genus, has the plumage compact, the bill rather short, slender, slightly bent upwards, and compressed towards the tip, with an obscure notch at the tip, no bristles on the gape; tarsus moderate in length, covered in front with a long undivided plate and four inferior scutellæ; wings short, broad, rounded, the first quill very short, the third and fourth nearly equal, the former being longest; tail short, even.

Cinclus pallasii is said to have a claim to be included in the European avifauna; but its claim rests solely on one specimen which was obtained in Heligoland by Gätke on the 31st December 1847; and it would seem that that example is no longer in the Gätke collection, as it is not included by Mr. Seebohm in his notes on the ornithology of Heligoland (Ibis, 1877, pp. 156–165). It appears to me not impossible, however, that the bird in question may have been *Cinclus asiaticus*. *Cinclus pallasii* is easily recognizable, being deep reddish brown above and below, and the tail and wings blackish brown; *Cinclus asiaticus* is a paler bird, and has a more slender bill.

The young of all our European Dippers are variegated.



COMMON DIPPER.

CINCLUS AQUATICUS

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CINCLUS AQUATICUS.

(COMMON DIPPER.)

- Sturnus cinclus*, Gm. Syst. Nat. i. p. 803 (1788, partim).
Turdus cinclus, Lath. Ind. Orn. ii. p. 343, "Europe, England" (1790).
Sturnus cinclus, L. Bechst. Naturg. Deutschl. iv. p. 167, "Germany" (1795, nec Linn.).
Turdus gularis, Lath. Ind. Orn. Suppl. p. xl. *av. jun.*, "Cumbria" (1801).
Cinclus aquaticus, Bechst. Orn. Taschenb. p. 206, "Germany" (1802).
Aquatilis cinclus (L), Montag. Orn. Dict. Suppl. (1813, nec Linn.).
Cinclus europæus, Leach, Syst. Cat. Brit. Mus. p. 21 (1816).
Cinclus medius, C. L. Brehm, Vög. Deutschl. p. 396, "Thüringia" (1831).
Hydrobata cinclus (L.), G. R. Gray, Gen. of B. p. 35 (1841).
Cinclus meridionalis, L. Brehm, Naumannia, 1856, p. 186, "Kärnthen."
Cinclus rufipectoralis, L. Brehm, tom. cit. p. 186, "Kärnthen."
Cinclus peregrinus, L. Brehm, tom. cit. p. 187.
Cinclus rupestris, L. Brehm, tom. cit. p. 188, "Saxony, Thüringia, Dalmatia."
Cinclus aquaticus, Bechst., Salvin, Ibis, 1867, p. 113, "British Isles and Central Europe."
- Dipper*, *Water-Ouzel*, *Water-Pyet*, *Water-Crow*, English; *Gobha-uisge*, *Gobha dubh nan allt*,
Lon uisge, Gaelic; *Aquassière*, French; *Wasseramsel*, *Wasserschwätzer*, German.

Figuræ notabiles.

D'Aubenton, Pl. Enl. 940; Werner, Atlas, *Insectivores*, pl. 20; Naumann, Vög. Deutschl. taf. 91; Gould, B. of Eur. pls. 83, 84; id. B. of G. B. ii. pl. xli.

♂ *ad.* capite summo et laterali et collo postico sordidè et saturatè brunneis: dorso, tectricibus alarum minoribus, uropygio et supracaudalibus saturatè nigricanti-cinereis distinctè nigro squamatis: alis et caudâ nigricanti-fuscis: secundariis et tectricibus alarum majoribus in pogonio externo vix cinereo marginatis: gulâ et pectore cum maculâ supra et infra oculos purè albis: abdomine superiore saturatè ferrugineo, abdomine imo nigricanti-brunneo: hypochondriis et crisso cinereo lavatis.

♀ *ad.* haud a mari distinguenda.

Juv. suprâ brunnescenti-schistaceus nigricante brunneo squamatus, remigibus ut in adulto sed albicante apicatis: subtùs albus plumis plus minusve brunneo apicatis, hypochondriis et crisso brunnescenti-schistaceis.

Adult Male (Aboyne, Scotland). Upper part of the head and nape dark brown; back and rump dark slate-grey, each feather broadly tipped with black, giving these parts the appearance of being blackish brown covered with crescentic dark grey marks; quills dark blackish brown on the outer web, narrowly margined with dark slate; larger wing-coverts similar to the quills, smaller ones like the back; tail dark brown, washed with dull slate; throat, fore part of the breast, and a small spot above and below

the eye pure white; lower part of the breast rusty red, merging into blackish brown, which latter colour pervades the rest of the underparts, the flanks, however, being washed with dark slate; beak blackish; legs dull brown; iris brown. Total length 6·5 inches, culmen 0·87, wing 3·5, tail 2·1, tarsus 1·12.

Adult Female. Undistinguishable from the male.

Young bird of the year. Above much paler than the adult bird, being dull slaty brown, each feather narrowly margined with dark blackish brown, primaries narrowly, and secondaries and larger wing-coverts more broadly tipped with dull white; underparts white, excepting the flanks and portions of the anal region, which are slaty brown, the feathers on the breast and abdomen here and there narrowly tipped with brown.

Nestling (Sterlingshire). Similar to the above, but on the breast and abdomen conspicuously marked with blackish brown and washed with pale yellowish buff; the short wing-feathers are only narrowly tipped with buffy white; on the back and head, portions of slaty down still adhere.

Obs. Having examined a considerable series of White-breasted Dippers from various localities, the following observations as to the various subspecies may not be out of place:—

England and Scotland. Fourteen specimens from the north of England and Scotland agree well *inter se*, and are all referable to *Cinclus aquaticus*, having the upper parts dark, and a considerable quantity of rufous on the breast. As a rule I find that this species has a shorter wing than *Cinclus melanogaster*, of which I have had no opportunity of examining an English-killed specimen.

Ireland. A single specimen, the only one which I have been able to obtain from there, is *C. melanogaster*, and agrees closely with specimens I have received from Sweden.

Rhine Provinces. A not quite mature specimen, obtained at Altenkirchen, agrees with British-killed examples.

Spain. Five specimens in the collection of Mr. Howard Saunders all belong to the subspecies I have deemed it best to keep separate under the name of *C. albicollis*. Two, however, from Santander have the underparts less rufous than the other specimens, one in particular having very little trace of rufous on the breast; and it would seem as if in the mountains of Spain there were a race of *C. albicollis* darker than the bird found at a lower altitude, and in coloration of the underparts slightly approaching *C. melanogaster*, though the upper parts are much paler than in that species and are scarcely, if at all, darker than in typical examples of *C. albicollis*. Canon Tristram, in whose collection are two specimens of this dark-breasted *C. albicollis*, has referred them to *C. melanogaster*; but, after a most careful comparison with a series of specimens, I cannot agree with him in this identification.

Switzerland. Four specimens from St. Gothard and Ursern are all typical *C. albicollis*, and agree very closely with others from

Italy, from which I have four specimens, all collected in Piedmont by Count Salvadori, and, with those from Switzerland, having on the average considerably more rufous on the underparts than is the case with the Spanish birds. The upper parts of these specimens are likewise very pale, though scarcely paler than one or two of the Spanish birds.

Greece. Three specimens collected by Dr. Krüper in Macedonia agree tolerably closely with examples from Italy, the only difference being that they have rather less rufous on the abdomen, and the lower parts of the abdomen, flanks, and region round the vent are paler and washed with light slate-grey. In size, as will be seen by the table of measurements, these Greek specimens run somewhat smaller than the average of European examples, one specimen measuring precisely the same as Canon Tristram's type of *C. aquaticus*, var. *minor*.

Galicia. Two examples from the collection of Baron A. von Hügel agree closely with British specimens.

Asia Minor. One specimen, shot near Erzerum, closely resembles examples of *C. melanogaster*, but has the brown on the head and neck rather paler, and extending further on to the back, and in general appearance approaches towards *Cinclus cashmiriensis*.

Palestine. One specimen, obtained at Nahr el Kelb, Lebanon, is *C. leucogaster*, and agrees closely with Swiss examples of this subspecies.

Algeria. A single specimen, obtained at Blidah, agrees in plumage with Greek specimens of *C. albicollis*, but is very small in size, and, if any thing, a shade darker on the upper parts than those. The specimen examined is the one described in 'The Ibis' for October 1870, p. 497, by Canon Tristram, under the name of *C. minor*.

Persia. Seven specimens from the Elburz mountains and from near Tehran, collected by Mr. Blanford and Major St. John, are all, I consider, referable to *C. cashmiriensis*; but some have more of the semilunar dark markings on the back than the specimens I have from Yarkand. Those from near Tehran have rather more rufous on the breast than the others.

Sikkim. Two specimens in immature plumage appear to be referable to *C. cashmiriensis*.

Yarkand. One specimen of *C. cashmiriensis* from the collection of Canon Tristram, a male obtained by Dr. G. Henderson, at Chagra, 8th October, 1870, has the brown on the upper parts extending to the rump, on the back darker than on the head, on the lower part of the back with a few scarcely perceptible dark crescentic marks.

Dauria. A series of specimens of *Cinclus leucogaster*, from my own collection, obtained by Dr. Dybowski from Lake Baikal, differ considerably *inter se* as to the amount of white on the underparts, some having the white extending down the centre of the abdomen nearly to the vent, whereas others have as little as *Cinclus cashmiriensis*, and are then undistinguishable from that species; and thus Mr. Blyth was not far wrong in referring Dr. Radde's birds (Ibis, 1866, p. 374) to *C. cashmiriensis*. I have not found any of the examples of *C. cashmiriensis* I have examined with as much white as in many of the specimens from Lake Baikal, and have therefore not deemed it advisable to unite these two species. Compared with *C. albicollis* and *C. aquaticus* these Baikal birds have the brown on the upper parts of a most peculiar shade of velvety brown, a colour I should be inclined to describe as mouse-brown; and this colour extends down to the rump, darkening towards the lower part of the back.

The following Table will show the variation in size of the different species of Dippers from various localities:—

| | | Culmen. inch. | Wing. inches. | Tail. inches. | Tarsus. inch. |
|---------------------------------|-----------------------|------------------|------------------|------------------|------------------|
| <i>Cinclus aquaticus</i> . . . | Great Britain. | 0·85–0·9 | 3·25–3·5 | 2·2–2·45 | 1·15–1·25 |
| „ . . . | Galicia. | 0·82–0·85 | 3·3–3·6 | 2·1–2·3 | 1·05–1·1 |
| <i>Cinclus albicollis</i> . . . | Sierra Nevada, Spain. | 0·82–0·88 | 3·2–3·7 | 2·0–2·3 | 1·1–1·15 |
| „ . . . | Pyrenees. | 0·9–0·92 | 3·1–3·4 | 2·0–2·3 | 1·1–1·15 |
| „ . . . | Switzerland. | 0·87–0·9 | 3·3–3·55 | 2·0–2·3 | 1·1–1·15 |
| „ . . . | Piedmont. | 0·9–0·95 | 3·35–3·45 | 2·3–2·4 | 1·15–1·27 |
| „ . . . | Greece. | 0·85–0·9 | 3·2–3·3 | 2·0–2·2 | 1·15–1·17 |
| „ . . . | Lebanon. | 0·87 — | 3·15 — | 2·1 — | 1·15 — |
| „ . . . | Algeria. | 0·85 — | 3·2 — | 2·0 — | 1·15 — |
| <i>Cinclus melanogaster</i> . | Sweden. | 0·91–0·93 | 3·45–3·6 | 2·3–2·35 | 1·13–1·25 |
| „ . | Denmark. | 0·9 — | 3·5 — | 2·15 — | 1·1 — |
| „ . | Ireland. | 0·92 — | 3·5 — | 2·3 — | 1·25 — |
| „ . | Asia Minor. | 0·87 — | 3·55 — | 2·3 — | 1·2 — |

| | | Culmen. inch. | Wing. inches. | Tail. inches. | Tarsus. inch. |
|------------------------------|---------------------|------------------|------------------|------------------|------------------|
| <i>Cinclus cashmiriensis</i> | . Elburz Mountains. | 0·82 — | 3·45–3·5 | 2·35–2·4 | 1·1 — |
| „ | . Tehran. | 0·87 — | 3·5 –3·55 | 2·4 — | 1·2 –1·3 |
| „ | . Yarkand. | 0·85 — | 3·7 — | 2·5 — | 1·25 — |
| „ | . Sikkim. | 0·85–0·9 | 3·45–3·45 | 1·8 –2·1 | 1·0 –1·1 |
| <i>Cinclus leucogaster</i> | . . Lake Baikal. | 0·85–0·87 | 3·2 –3·3 | 2·0 –2·3 | 1·1 –1·15 |

THE Common Dipper is found throughout Central Europe and in the British Isles, being replaced in the north by *Cinclus melanogaster* and in the south by *C. albicollis*.

In Great Britain *C. melanogaster* is found on the east coast of England and in Ireland, being in Norfolk more numerous than the present bird, which alone appears to occur in other parts of England and in Scotland, in which latter country, Mr. Robert Gray writes (B. of W. of Scotl. p. 70), it “is a bird of wide distribution in almost every county north of the Solway and the Tweed. There is not a river or Highland burn of any consequence but is frequented by several pairs, which may be met with every few miles of its course, from the very fountain-head where the heath-embedded rocks are crowned with moss and ferns, down a succession of waterfalls and mill-races, to the broad expanse at its junction with the sea. I have never traversed the banks of any Scottish stream without meeting this bird; and I have seen it repeatedly in rocky gullies worn in the mountain-side, far up beyond the line where one expects to find only birds of plunder. In some of the glens on the Loch-Lomond mountains three or four pairs constantly attract the rambler as he traverses their romantic haunts; and their nests are found in sites ranging from the level of the loch itself to the very summit of the chain, whence another streamlet takes its source and rolls down the other side into the Firth of Clyde.” He further writes that it is “common on the burns of Mull and Islay, and is also met with in the island of Harris, one of the Outer Hebrides, from which locality I have been kindly favoured with a specimen by Mr. Alexander Cameron, of Lochmaddy. Mr. Elwes has also met with it there.”

In England the Dipper is not rare in suitable localities, but, owing to its fondness of mountain-streams, is very local in its distribution. Mr. More, Professor Newton states, has ascertained that it breeds occasionally in Cornwall and Dorset, but regularly in Devon, Somerset, probably throughout Wales, Monmouthshire, Herefordshire, Salop, Staffordshire, Cheshire, Derbyshire, Yorkshire, and Lancashire; and Thompson (B. of Irel. i. p. 116) records it from Ireland as inhabiting suitable localities throughout the island.

In Scandinavia and, so far as I can ascertain, in Russia, unless in the western portion of that country, the present species does not occur, being replaced by *C. melanogaster*; but in all the mountainous portions of Germany the Common Dipper occurs in suitable localities and is resident. Count Casimir Wodzicki met with it in the Carpathians, on the mountain-streams, where, during the summer, it is found at an altitude of 4000 feet, or even higher. The Ritter von Tschusi-Schmidhofen states (J. f. O. 1869, p. 227) that it is very common on the Elbe and the Elbbach, where he found it breeding; and Dr. Otto Finsch records it (J. f. O. 1859, p. 382) as occurring, though rarely, as far south as the mountains of Bulgaria; but it is possible that he may refer to *C. albicollis*. In Styria it is, Mr. Seidensacher informed me when there, common, and resident near Cilli; and Dr. A. Fritsch speaks of it as resident in Bohemia. Near Halle, in

Saxony, it is rare, as Dr. E. Rey refers only to a single instance of its occurrence; and in the flat portions of Northern Germany there are but few localities where a bird so essentially a frequenter of mountain-streams can find a suitable habitat. In North-western and Western Germany, where the country is hilly, it is not uncommon in some localities. Mr. Rudolf Blasius met with it breeding in the Hartz; and Dr. Altum writes (J. f. O. 1863, p. 118) that it is common on all the rivers of Westphalia and in the Arnsberg district, but rare near Münster. Mr. Sachse informs me that it is not uncommon in the Coblenz district near Altenkirchen, and sends me notes on its nidification, which I translate below.

In Northern France it is stated by Messrs. Degland and Gerbe to occur in many parts during the winter, and is resident on most of the mountain-streams; and Messrs. Jaubert and Barthélemy-Lapommeraye refer to it as occurring on the streams of the Var and the Basses-Alpes. In Southern Europe it is replaced by a very closely allied form, *C. albicollis*.

As its name would lead one to infer, the Dipper or Water-Ouzel is strictly a frequenter of streams and places where there is an abundance of water; and if one would observe and study its habits it must be sought amidst the stones and rocks that divide the current or are strewn along the banks of some mountain-burn or running brook in an undulating or hilly country, being but seldom met with in the sluggish streams that intersect the lowlands and flat-lying portions of the country. It may generally be seen seated on a stone by the water-side, or in the middle of the stream sitting quietly, occasionally, however, bobbing or dipping its body and jerking its tail after the manner of a Wren or a Chat, ever and anon plunging or walking quietly into the water, where it appears as much at home as on the land, and where its food is chiefly obtained. Many naturalists have written respecting the peculiar facility with which this bird moves under the surface of the water, either advancing along the bottom of the stream or moving as if flying under water after the manner of a Diver. I have often observed its close relative *Cinclus melanogaster* plunge into the seething whirl of a rapid in one of the swift-running Swedish waterfalls, and reappear after a few moments in a position that showed that it must have been moving against stream in spite of the extreme force of the current; indeed they seem to delight in the whirl of the swiftest torrents. It either walks quietly into the water or alights on the surface and plunges in like a diver, not precipitating itself head foremost from the wing like the Kingfisher. Macgillivray well describes the actions of the Dipper under water as follows:—"I have seen it moving under water in situations where I could observe it with certainty, and I readily perceived that its actions were precisely similar to those of the Divers, Mergansers, and Cormorants, which I have often watched from an eminence as they pursued the shoals of sand-eels along the sandy shores of the Hebrides. It, in fact, flew, not merely using the wing from the carpal joint, but stretching it considerably, and employing its whole extent, just as if advancing in the air. The general direction of the body in these circumstances is obliquely downwards; and great force is evidently used to counteract the effects of gravity—the bird finding it difficult to keep itself at the bottom, and, when it relaxes its efforts, coming to the surface like a cork. Montagu has well described the appearance which it presents under such circumstances. In one or two instances, where we have been able to perceive it under water, it appeared to tumble about in a very extraordinary manner, with its head downwards, as if picking something; and at the same time great exertion was used, both by the wings and legs. This tumbling,

however, is observed only when it is engaged in a strong current; and its appearance is greatly magnified by the unequal refraction caused by the varying inequalities of the surface of the water. When searching for food, it does not proceed to great distances under water; but, alighting on some spot, sinks, and soon reappears in the immediate neighbourhood, when it either dives again, or rises on wing to drop somewhere else on the stream or settle on a stone. Often from a shelving crag, or large stone, it may be seen making short incursions into the water, running out with quiet activity, and presently bobbing up to the surface, and regaining its perch by swimming or wading. The assertion of its walking in the water on the bottom, which some persons have ventured, is not made good by observation, nor countenanced by reason and the nature of things. The Dipper is by no means a walking bird; even on land I have never seen it move more than a few steps, which it accomplished by a kind of leaping motion. Its short legs and curved claws are very ill adapted for running, but admirably calculated for securing a steady footing on slippery stones, whether above or beneath the surface of the water. Like the Kingfisher it often remains a long time perched on a stone; but in most other respects its habits are very dissimilar.

“The first opportunity which I had of observing this bird advancing under water occurred in Braemar in 1819, when, from the bank of the stream which passes by Castleton, I noticed one ‘tumbling about’ in the rapid current. In September 1832 I watched a Dipper for some time on a part of the Tweed, where the current was very strong. It flew off from the shore and alighted in the middle of the stream, when it immediately dived. Reappearing a little way further up the river, it floated for a few seconds, dived, emerged, and flew to the opposite bank, on reaching which it again disappeared under water for a short time, and thus continued its exertions. When perched on a stone near the shore, especially if the water be not much agitated around, it usually makes short incursions into it, apparently for the purpose of procuring food, and returns to its station. On these occasions it is not difficult to approach it, provided due precaution be used; but in general it is shy and easily alarmed. I have several times shot an individual which observed me as I was quietly walking up to it; but it is not often that one remains until you come within shot. A method which I have often successfully practised was to mark the position of the bird at a distance, taking note of an object on the bank opposite to it, then make a circuit, and suddenly come upon the spot. When one has been pursued either up or down a stream for a quarter of a mile or so, it usually turns to regain its ordinary station, when it may be shot as it shoots past.

“In August 1834, while ascending White Coom, the highest mountain in Dumfriesshire, accompanied by my son, I observed a Dipper retreating beneath a large stone, over which the water fell, in the midst of a streamlet that flowed along the bottom of a narrow scar or rut. Imagining that its nest or young might be concealed there, we went up to the place, and, on perceiving the bird behind the little waterfall, endeavoured to catch it, on which it sallied forth, plunged into the pool and attempted to escape down the stream, but without success; for we met it at every turn, and it was obliged to betake itself again to its retreat. We now turned off the water from the stone, when it again plunged into the pool, and, after some turnings, at length effected its escape. On emerging at some distance it flew off; and I considered it strange that it had not used its wings at first, as it certainly could more easily have escaped through the air

than through the water. The chase afforded another rare opportunity of viewing its subaqueous flight, which, in all probability, was caused by excessive alarm. It flew about in the pools just as birds would fly in a confined space in the air, but of course with less velocity, and on diving at first seemed covered with small air-bubbles which adhered to its surface." That the Dipper does, however, sometimes dive head first like the Kingfisher appears to be certain; for Mr. A. von Homeyer (J. f. O. 1860, p. 301) describes it from personal observation as so doing—and remarks also that he observed it hover over the water with its legs hanging down, then drop quietly on to the surface and swim about like a Duck. The flight of the Dipper is swift, direct, and powerful, much resembling that of the common Kingfisher. It usually flies at a short distance above the surface of the water, urging itself forward by quick, regular strokes of the wings without intermission, never appearing to sail in the air with extended pinions.

Mr. E. R. Alston informs me that, according to his experience, the Dipper, "like some water-birds if suddenly disturbed or surprised, will sometimes dive and come again to the surface under the shelter of an overhanging stone, or among weeds, where it will remain hidden with only its head above water; when wounded I have seen one take to land and conceal itself artfully under loose stones. The *dipping* or *curtseying* of this bird is a curious motion, the whole body being moved from the thighs and the tail flirled at the same moment. It would be an interesting question to consider what can have been the original use of this movement, and how it came to be perpetuated."

The Dipper has been subjected to no little persecution, owing to the mistaken idea that it feeds on the spawn of salmon and other fish; but I need scarcely say that this accusation is utterly unfounded, its food consisting solely of aquatic insects. According to Mr. R. Gray it was formerly the custom in Scotland to allow any one who shot a Dipper the privilege of fishing during the close season as a reward; and Mr. Harvie Brown states that to this day a reward of sixpence per head is given for Dippers in some parts of Sutherlandshire. Mr. E. R. Alston, who has carefully examined the stomachs of specimens shot by him in Scotland, informs me that "they invariably contained aquatic insects and larvæ, and sometimes freshwater shrimps (*Gammarus pulex*);" and Mr. Robert Gray says that instead of doing harm by destroying the spawn of fish, they act as the angler's best friend by devouring immense quantities of the larvæ of dragonflies and water-beetles, creatures which are known to live to a great extent on spawn and even the newly-hatched fry of both trout and salmon.

Mr. Gould examined by dissection five specimens sent to him from Penoyre, on the Usk, where they were said to be feeding on the recently deposited roe of the trout and salmon, and writes (B. of G. B. pt. i.) that he "found no trace whatever of spawn in either of them. Their hard gizzards were entirely filled with larvæ of *Phryganeæ* and the water-beetle (*Hydrophilus*). One of them had a small bull-head (*Cottus gobia*) in its throat, which the bird had doubtless taken from under a stone."

The song of the Dipper is pleasing, and may be heard at all seasons of the year, even in the winter. Mr. Robert Gray writes that "once about dusk, when rambling along the margin of the Clyde, near Lanark, after the breaking up of a long-enduring frost, I was delighted to hear the familiar voice of a Dipper close at hand, and, on looking round, to find the 'sweet singer' perched on a floating block of ice which was somewhat swiftly sailing with the current of the

swollen river. Waiting until it had passed me, I had time to observe that his perch was a bit of turf that had been frozen in the block, and that the little sailor seemed hardly conscious of being wafted onwards. The song continued until the tiny iceberg reached a much swifter current, running between two islets in the centre of the river, when the bird, apparently realizing his change of locality through the walloping motion of the novel craft, sprang with a whirr from his perch, and in another moment was pursuing his rapid flight straight up the stream."

In almost all localities where the Dipper is found it is resident, breeding in the same place where it has spent the winter. All the nests of the Dipper which I have had an opportunity of examining were placed under the shelter of an overhanging crag or shelf of rock, in some instances being behind a small waterfall, and always carefully concealed. The nest itself is a large structure composed of moss, and lined with grass and leaves, the entrance-hole being on the side. The eggs, usually four in number, are deposited in April or early in May; they are rather elongated in form, tapering towards the smaller end, and are pure white in colour, the texture of the shell being extremely fine and glossy. In size, those in my collection, vary from $\frac{3.7}{4.0}$ by $\frac{2.9}{4.0}$ to $1\frac{3}{4.0}$ by $\frac{3.0}{4.0}$ inch.

Macgillivray writes that at Boghead the Dipper begins to build about the middle of April. "The nests are constructed with much ingenuity, and are large for the size of the birds. The exterior part of them is composed of moss very compactly felted together, having a hole in their side resembling that of the common Wren. In the interior part the under layer is lined with the stalks of strong grass, and the upper one, in all the nests that I have seen, with the leaves of the beech or the oak. To the place where these birds have once taken up their residence they are strongly attached. In the hole of an old wall at the back-lade of Livingston mill-dam, for a considerable time, I have observed one of their nests. Mr. Meikle, the miller, told me that a pair of them have built in it for thirty-one successive years, and that they generally had three broods in the season, and four birds in each of them. Although the nest was within a foot of the waterfall, which even sometimes passed over it, they nevertheless flew in and out with the greatest apparent ease. I am acquainted with a boy who told me that he had taken one repeatedly out of her nest, and, after having replaced her, she continued to sit upon her eggs. Being anxious to procure a good specimen of the female, I caught one whilst sitting upon her brood. As several of the feathers of her wings and tail were much worn, I pulled them out, and set her at liberty. In the course of a few hours, however, she returned, and, unmoved by this unusual treatment, fed her little ones as anxiously and carefully as ever, and, although deprived of her partner, brought them up to maturity. On the banks of the river Avon, about a mile and a half below the bridge of Linlithgow, I last summer discovered a nest in rather a curious situation. It was built in an angle between two fragments of rocks under a small cascade; and although the water fell upon part of the dome, the compactness with which it was put together rendered it impenetrable." Mr. E. R. Alston also informs me that "in Lanarkshire, where the Dipper is one of our earliest breeders, I have noticed that the nesting-place is usually selected in the lower and more sheltered reaches of the streams, but as soon as the young are fully fledged the whole family migrate to the higher and smaller tributaries, where they spend the summer. If unmolested they return year after year to the same place. Mr. Hearle Rodd considers that this bird, like the Wren, often makes several futile attempts at nest-building

before it completes its work (Zoologist, 1866, p. 268); and I believe that this is the case, although I have never been able to prove the fact. Sometimes the Dipper shows unwonted boldness in its choice of an abode. I have known a pair to build in a hole in a wall to which they could only gain access by darting between the revolving spokes of a mill-wheel."

Victor, Ritter von Tschusi-Schmidhofen, records (J. f. O. 1870, p. 275) a peculiar instance of the Dipper placing its nest in a perfectly open position. When on a visit to the Rev. Mr. Hanf, at Mariahof, in Styria, a peasant told him that he had found a Dipper's nest in a perfectly open situation in a ditch; and such proved to be case; for on going to the place the nest was seen from a considerable distance, and resembled a green mole-hill. The nest itself, writes this gentleman, "was placed on a stone, and was constructed of coarse moss outside, with finer moss in the interior, and lined with fine grass; it measured $11\frac{1}{2}$ " outside, and $4\frac{3}{4}$ " inside diameter. . . . On looking into the nest I saw that it contained five young ones, which I ascertained by putting my hand into the nest. I had just withdrawn my hand when they all plunged into the water, immediately dived down, and swam away under the water, until they reached a place on the shore where they could hide themselves. To see how these birds swam under the water, we put three of the young ones which we had caught, into it. They immediately dived down, made five or six movements with their feet, and then reached the shore. During the swimming under the water they stretched their head forward, the legs being kept close to the body, and used their half-grown wings like oars, each movement bringing them about a foot forward. I was previously unaware that the young birds, so soon as threatened by any danger, attempted to escape in the water, being able to swim, but thought that they only learned to do so when obliged to seek for food; at all events they are thereby able to save themselves from many dangers from which they could not escape if only able to seek refuge on land."

Mr. Carl Sachse, writing to me from Altenkirchen, in Rhenish Prussia, says that it "remains there during the entire year, and the male bird often utters its song on clear frosty days. When frightened it flies swiftly close to the surface of the brook, but when undisturbed will often fly thirty or forty yards above the water, its flight being then bow-shaped; and it frequently passes over the woods to another brook, uttering, when on the wing, a clear loud cry. It usually frequents the most turbid portions of our streams, its nest being placed in holes in the walls of the mill-dam. It sits very close, and will not leave its eggs till one puts one's hand into the nest-hole, and, even when repeatedly disturbed, will not forsake. In mild seasons it breeds in March, and I found callow young this year (1873) on the 13th of April. Usually two broods are raised in the season, the second lot of eggs being deposited in May; and if these are taken it frequently breeds a third time. In four years I have taken thirty-four eggs out of one nest-hole, sixteen of which (viz. six, five, and five) were laid in one season. All the nests I have taken had the foundation composed of green moss, on which was a layer of fine roots and grass, the internal lining being composed of dry oak leaves. The hole out of which I took the thirty-four eggs was in the foundation wall of a water-mill; and the whole face of the wall being covered with green moss furnished the birds with ample materials for their nest. The entire hole, thirty centimetres long, sixteen high, and twelve wide, was filled with this green moss, only a small hole being left by the birds for exit and ingress; and behind this the nest itself was built. Immediately in front of the hole were two water-wheels, so that I could not reach the

nest without being drenched, except by having the wheels stopped. About ten years ago I first found the bird breeding there, and took five fresh eggs in April; and in 1870 I again examined the nest on the 11th of May and took out of it five fresh eggs, the nest being taken out and destroyed by my boy. Three days after the birds were busy collecting fresh materials, and soon built a fresh nest in the same hole; and on the 22nd of May this nest was likewise taken, and contained four eggs. On the 23rd of April, 1871, six eggs were taken, on the 7th of May five, and on the 27th of May five, all out of the same nest-hole. The bird sat very close, and never left till I put my hand into the nest-hole. On one occasion she flew right into a large body of water which fell eighteen feet, with sufficient force to carry away a horse, dived under the second water-wheel, and, appearing on the surface about thirty paces distant, flew away, uttering a mournful note. In 1872 I found in the same hole, on the 24th of March, two young just hatched and three eggs, and on the 3rd of May three eggs. The mill was then undergoing repairs; and the workmen amused themselves by catching the old birds and letting them go, and finally destroyed the nest. Since then they have never returned, and now nest somewhere in the banks of the brook. A pair once built in an ice-house close to a water-mill, placed so that they could only reach their nest by flying through a covered ditch over a hundred paces long."

The specimens figured were obtained in Scotland, and are in my own collection.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a, b, c. Aboyne, Aberdeenshire, September 1871 (*R. B. S.*). *d.* Aboyne, November 1871. *e, f.* Aboyne (*J. Waters*). *g, juv.* Coblenz. *h, pull.* Bonnywater, Stirlingshire (*J. A. Harvie Brown*).

E Mus. H. B. Tristram.

a, ♀. Northumberland, 1838 (*T. C. Adamson*). *b.* Bewick, 1853. *c, d.* Alston Moor, Cumberland, 1866. *e, juv.* Alston Moor. *f, juv.* Hexham, May 1867 (*Procter*). *g.* Leadenhall Market, November 8th, 1868 (*J. G.*).

E Mus. Lord Lilford.

a, ♂. Gaick, Inverness-shire, October 1871.

E Mus. Feilden and Harvie Brown.

a, ♂. Carron river, Stirlingshire, April 3rd, 1872 (*J. A. H. B.*).

E Mus. Edward R. Alston.

a, ♀ juv. Stockbriggs, Lanarkshire, June 27th, 1865 (*E. R. A.*).

E Mus. Howard Saunders.

a, ♀. Northumberland (*R. G.*).

E Mus. Baron A. von Hügel.

a, b. Stonehaven, Kincardineshire, September 1869 (*A. von H.*). *c, ♀.* Galicia, 1871. *d, juv.* Galicia, 1871.



PALE BACKED DIPPER
CINCLUS ALBIGULARIS

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BLACK BELLED DIPPER
CINCLUS MELANOGASTER

CINCLUS MELANOGASTER.

(BLACK-BELLIED DIPPER.)

Sturnus cinclus, Linn. Syst. Nat. p. 290, "Sweden" (1766).*Sturnus cinclus*, L., Nozemann, Nederl. Vog. tab. xiv. "Holland" (1770).*Cinclus melanogaster*, C. L. Brehm, Lehrb. eur. Vög. i. p. 289, "N.E. of Old World" (1823).? *Cinclus septentrionalis*, C. L. Brehm, tom. cit. i. p. 287, "Norway, Germany in winter" (1823)." *Cinclus aquaticus*, Bechst.," Kjærb. Danm. Fugle, p. 135, "Denmark" (1852, nec Bechst.).*Cinclus septentrionalis*, L. Brehm, Naumannia, 1856, p. 188, "Scandinavia."*Cinclus melanogaster*, L. Brehm, tom. cit. p. 189, "coast of Rügen."" *Cinclus aquaticus*, Bechst.," Nilsson, Skand. Faun. i. p. 371, "Sweden" (1858, nec Bechst.).*Cinclus melanogaster*, Br., Salvin, Ibis, 1867, p. 115, "Scandinavia, Denmark, Erzerroom, Holland, Norfolk."" *Cinclus aquaticus*, Bechst.," Collett, Orn. of Norway, p. 7, "Norway" (1872, nec Bechst.).*Aarpisa*, Færoese; *Fossekal*, Norwegian; *Strömstare*, Swedish; *Stromstær*, *Bækdrossl*, *Vandstær*, Danish; *Quoikgarek*, Lapp; *Wodianoi worobei*, Russian; *Kara-Turgai*, Bashkir; *Wasez*, Ziran; *Koshikara*, Finnish.*Figuræ notabiles.*

Kjærb. Orn. Dan. taf. xv.; Sundevall, Sv. Fogl. taf. xi. fig. 5; Gould, B. of G. B. ii. pl. 42.

♂ *ad. Cinclø aquatico* similis, sed suprà paullò saturatiore; abdomine superiore fere omnino nigricanti-brunneo, nec ferrugineo.*Adult Male* (Stockholm, 28th December). In general appearance resembling *C. aquaticus*; but the underparts are darker, and below the white breast there is no rusty red colour, the lower part of the breast and abdomen being uniform blackish brown, except that the flanks are washed with slate-grey. Judging from the specimens before me, the bill is rather stouter than in *C. aquaticus*. Total length 6½ inches, culmen 0·9, wing 3·7, tail 2·25, tarsus 1·2.*Female*. Similar to the male.*Young*. Resembles the young of *C. aquaticus*.THIS, the true *Sturnus cinclus* of Linnæus, is the most northern of the three European Dippers, and inhabits Scandinavia and Northern Russia; and probably also this is the species that inhabits the Ural, as a slightly modified form, somewhat resembling *C. cashmiriensis*, appears to occur in Asia Minor.

It has been recorded by Mr. H. Stevenson from Norfolk, where it is, he states, the predomi-

nating species. This gentleman writes (B. of N. i. p. 68) as follows:—"The Water-Ouzel can be considered only as an accidental visitant to this county, the few specimens obtained from time to time appearing between the months of November and February (usually in severe weather) upon our inland streams, as well as in the vicinity of the coast. Whether or not the Black-breasted Water-Ouzel, the *Cinclus melanogaster* of Gould's 'Birds of Europe,' is specifically distinct from the ordinary British form, with a chestnut band across the abdomen, or merely a climatal variety, undoubtedly our Norfolk specimens belong to the former type. I have at different times examined six or seven examples, all killed in this county, which, with one exception to be hereafter mentioned, exhibited no trace of chestnut on the underparts, but were identical with a Lapland specimen in the Norwich Museum (no. 40 *b*), collected in that country by the late Mr. Wolley. We may naturally suppose, therefore, from this circumstance, and the season at which our few Norfolk specimens invariably appear, that they are chance stragglers from the Scandinavian peninsula; and that this opinion is entertained also by Mr. Gould, to whom I communicated the above particulars for his new work 'The Birds of Great Britain,' is shown by his concluding remark, 'I can account for their occurrence in no other way.' The Messrs. Paget refer to one example of this bird in the collection of Mr. Youell, of Yarmouth, as having been killed at Burgh in November 1816; and Mr. Hunt, in his 'list,' mentions Costessey and Laverham as places where the Dipper had occurred to his knowledge. Mr. Stephen Miller, and the Rev. Mr. Penrice, of Plumstead, had also each a specimen in their collections, both of which I have no doubt were obtained in this county. The specimen no. 40 *a* in the Norwich Museum is the one mentioned by Mr. Lubbock in 1845, as 'lately' shot at Hellesdon Mills; and two others are stated, by the same author, to have been seen at different times by trustworthy observers at Marlingford and Saxthorpe. Of more recent occurrence I may notice a male in my own collection which was brought to me in the flesh, having been shot in November 1855, whilst hovering over the river between the Foundry bridge and the ferry. It is not a little singular that a bird so accustomed to the clear running streams of the north, and the quiet haunts of the 'silent angler,' should be found, as in this case, almost within the walls of the city, sporting over a river turbid and discoloured from the neighbouring factories, with the busy noise of traffic on every side. About the same time that this bird appeared near the city, three others were observed on more than one occasion on the Earlham river by Mr. Fountaine, of Easton, who is well acquainted with our British birds; but these suddenly disappeared, and were not seen again. Mr. Cremer, of Beeston, has one killed in that neighbourhood on the 25th of December of 1860; another, in the possession of Mr. Bullock, a bird-stuffer, in Norwich, was also procured in that year; and a third, in my own collection, on the 29th of January, 1861. All these birds were shown me in the flesh, and had black breasts like my first specimen, and were in good plumage and condition. There is also a similar example in the late Mr. L'Estrange's collection at Hunstanton Hall, amongst the birds said to have been killed in Norfolk, and which was most probably obtained on that part of the coast. From the winter of 1861 I know of no others either seen or procured in Norfolk until the 24th of November, 1864, when a male bird was shot at Buxton by Mr. J. Gambling, who very kindly presented it to the Norwich Museum (British series, no. 40 *c*)."

Since the above was written, however, Mr. Stevenson has examined the specimens above

referred to, and in a letter just received informs me that he has had the specimen in the Norwich Museum, shot at Hellesdon Mills about 1845, carefully cleaned, and has no doubt that it is one of the red-breasted race, as also the one killed at Burgh, near Yarmouth, in November 1816, recorded by Messrs. Paget. "Both races have occurred in Norfolk; but *Cinclus melanogaster* predominates. The specimen obtained by Mr. Bullock, above referred to, is now in Mr. J. H. Gurney's, jun., collection. A second specimen from Buxton Mills, also presented by Mr. Gambling, was shot 17th March, 1869; another by the side of a pond in Fellbrig Park, in April 1872, a most unusual date. Both these are *Cinclus melanogaster*."

This black-breasted species likewise occurs in Ireland, as a specimen sent to me by Mr. Blake Knox, the only one I possess from that country, is clearly that, and not *C. aquaticus*. It has occurred in the Færoes; and Captain Fielden writes, "Svabo mentions that it attempted to nest in the northern isles. Landt records it as known chiefly by name, but received one example procured near Thorshavn; and Mr. H. C. Muller obtained it, about three years ago, also near Thorshavn." In Norway Mr. Collett (*op. cit.*) records it as "not very numerous in West Finmark, where, as in East Finmark, it occurs in the inland tracts. At the approach of winter it moves towards the coast, and at that season of the year may frequently be met with on the Island of Tromsö." It occurs far to the north, as Messrs. F. and P. Godman observed it at Bodö, and Pastor Sommerfelt states that it breeds here and there on the Varanger fiord. Professor Sundevall writes (*Sv. Fogl.* p. 75) that in Sweden it is more numerous in the high north during the summer, being comparatively rare in the south. He saw it in the Gudbrandsdal in June; and it is said to occur in Southern Dalecarlia during the summer season. Mr. Lundborg found it breeding in the northern portion of Ostergöthland; and Mr. Lowenhjelm observed it near Jönköping in August. I used to see it regularly near Gefle, in portions of the river which did not close during the winter season, but did not observe it there in the summer. Wheelwright met with it in Quickjock, Lapland, where, he states, it "was very common in all the rivers at the foot of the fells, and, if they did not remain here all the winter, must have been very early spring migrants; for we saw them when we arrived, running along the ice by the sides of the waterfalls, or sitting on the snow banks, uttering their low, plaintive little song, which always sounds to me like nothing but a rehearsal. It is a cheerful little bird, and, were it not for the belief that it is a great enemy to the spawn of fish, must be a favourite with every northern angler." In Northern Russia it is rare: it is said by our collector at Archangel, from whom I have one specimen, to occur not unfrequently there; but Mr. Meves never met with it. Mr. Sabanäeff informs me that in Northern Russia it is rare, but breeds in the Governments of Jaroslaf, Moscow, and Smolensk. It occurs throughout the Ural, and occasionally breeds along the shores of the lakes on the edge of the Ekaterinburg and Shadrinsk districts. On the southwestern slope Hoffmann met with it in 62° N. lat. With us, in my opinion, it is resident, though Bogdanoff doubts this being the case." I have not been able to examine a specimen from Eastern Russia; but one obtained at Erzerum is referable to the present species, though it somewhat resembles *C. cashmiriensis*. The present species is said to occur in Northern Germany; and at the meeting of the ornithologists of Mecklenburg (*J. f. O.* 1863, p. 281) it was stated that in that province this species alone is met with. In Denmark it is, Kjærbölling writes, partly a resident and partly a migrant or partial migrant; it occurs on the east coast of Jutland

and Schleswig; and Mr. Bölling observed it near Fredricksborg. Mr. Kjærbölling further records it from Aarstrup, Möen, near Copenhagen, Thyrsbæk, Greena, Viborg, Apenrade, Veile, and Helsingöer. Nozemann (*op. cit.*) records it from Holland. Canon Tristram (*Ibis*, 1867, p. 467) states that it occurs in the Pyrenees; but, having examined the specimens referred to, I cannot confirm this, and look on them merely as rather dark varieties of *C. albicollis*, having but little rufous on the breast. How far to the south-east of Europe this species occurs I cannot tell; but Messrs. Dickson and Ross (*P. Z. S.* 1839, p. 120) met with it in December at Erzeroom; and Mr. Keith Abbott records the occurrence of a Dipper at Trebizond (*P. Z. S.* 1834, p. 51), which I believe to be the present species. I also infer that the Dipper recorded by Ménétries (*Cat. Rais.* p. 29) as occurring in the Caucasus is the present species.

In its habits, note, and mode of nidification the present species does not differ from *Cinclus aquaticus*; and what is said on that head respecting that species is equally applicable to the present bird. I had ample opportunities of watching it when in Sweden, and could detect no difference in habits or note from our bird. I never found its nest; but judging from the information received from Scandinavian naturalists, its mode of nidification is likewise similar to that of *C. aquaticus*. It is a very hardy bird; and I have often observed it diving in open parts of the waterfalls during the most intense cold. Mr. E. R. Alston sends me the following curious information respecting its habits when, during the intense cold, it is unable to obtain its food in the usual way, owing to all the streams being icebound:—"In Norway Mr. Harvie Brown and I met with the Black-breasted Dipper on the Fillefjeld, at an altitude of 2500 feet and upwards, in May and June 1871. At that season the brooks and streams were still icebound or buried under snow-wreaths, and the Dippers were consequently driven to seek for food on land; one which we dissected had been feeding on flies and ground-beetles (*Diptera* and *Carabidæ*)."

In the same work where Brehm described the present species he also describes, a couple of pages earlier, a Dipper under the name of *C. septentrionalis*, which, he states, is found in Norway in summer and in Germany in winter. As he does not appear to have examined a specimen from the former locality, I am doubtful if the bird referred to really is the present species or *C. aquaticus*, and have therefore considered it most expedient to retain the name of *C. melano-gaster*, by which this form is generally known, and to put *C. septentrionalis* amongst the synonyms, with a query.

The specimen figured, on the same Plate with *Cinclus albicollis*, and described, is in my own collection.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

- a.* Ireland (*H. Blake-Knox*). *b*, ♂. Wermdö, Sweden, January 12th, 1871. *c*, ♂. Stockholm, December 28th, 1871. *d*, ♂. Stockholm, March 1st, 1872. *e*. Wermland, winter 1870. *f*, ♂. Mudjuga, forty miles north of Archangel, September 12th, 1873 (*Piottuck*).

E Mus. Lord Walden.

- a.* Erzeroom, Asia Minor, May 1866 (*Robson*).

CINCLUS ALBICOLLIS.

(PALE-BACKED DIPPER.)

Hydrobata albicollis, Vieill. Nouv. Dict. i. p. 219, partim (1816).*Cinclus aquaticus*, var. *rufiventris* et *albiventris*, Ehrenb. Symb. Phys. Aves, fol. bb, "Syria" (1828)."*Cinclus aquaticus*, Bechst.," C. L. Brehm, Vög. Deutschl. p. 395, "Alps of Switzerland and Thuringia" (1831, nec Bechst.)."*Cinclus aquaticus*, Bechst.," Von der Mühle, Beitr. Orn. Griechenl. p. 56, "Patras and Rumelia" (1844, nec Bechst.)."*Cinclus aquaticus*, Bechst.," Lindermayer, Vög. Griechenl. p. 76, "Greece" (1860, nec Bechst.)."?*Cinclus aquaticus*, Bechst.," Barb. du Bocage, Av. de Portugal, p. 82, "Portugal" (1862, nec Bechst.).*Cinclus albicollis* (Vieill.), Salvin, Ibis, 1867, p. 114, "Switzerland, Lebanon, and probably all the mountainous districts of the South of Europe."*Cinclus minor*, Tristr. Ibis, 1870, p. 497, "Mount Atlas, Algeria.""*Cinclus aquaticus*, Bechst.," Doderl. Av. Moden. e Sicilia, p. 101, "Sicily" (1870, nec Bechst.).*Merlo d'acqua*, *Merlo acquajolo*, *Storno d'acqua*, Italian.*Figuræ notabiles.*

Bettoni, Ucc. Lomb. tav. 105; Roux, Orn. Prov. pl. 178?

♂ *ad. Cinelo aquatico* similis, sed ubique valdè pallidior, abdomine magis ferrugineo: capite suprà, collo postico et dorso superiore pallidè brunneis: dorso postico, uropygio et tectricibus alarum superioribus cinereo-schistaceis sordidè nigricante brunneo squamatis: remigibus cinereo-brunneis in pogonio externo schistaceo marginatis, secundariis externis albido apicatis: abdomine superiore lætè ferrugineo, abdomine imo saturatè brunneo: hypochondriis et crisso schistaceis, vix brunneo adumbratis.

Adult Male (Switzerland). In general plumage resembling *C. aquaticus*; but the upper parts are considerably lighter, the brown on the head and neck is several shades lighter and extends far on to the back; the ground-colour of the lower part of the back, rump, and upper tail-coverts is light slate-grey, not blackish slate; this light slate-colour also pervades the wing-coverts; quills slaty brown; secondaries margined with light slate on the outer web, some of the outer secondaries having also narrow white tips; lower part of the breast rich rusty red, this colour extending much further towards the vent than in *C. aquaticus*; lower part of the abdomen dull dark brown; crissum and flanks slate-grey, slightly marked with brown. Total length 6·7 inches, culmen 0·9, wing 3·5, tail 2·15, tarsus 1·22.

Female. Similar to the male.

Young. Closely resembles the young of *Cinclus aquaticus*.

ANY naturalist who has worked at a particular family is well aware of the difficulty in defining what a species is; and I know of no family where this difficulty is more apparent than in the Dippers. In the case of the Magpies, where I found specimens answering to the description of *P. hudsonica*, and closely agreeing with others from America, amongst a series collected in England, and where, again, examples from Spain answered exactly to the description of the so-called *P. bottanensis* from Bhootan, I could not do otherwise than unite them all under the one species; but in the present instance, where each form is found within a certain restricted portion of the Palæarctic Region, I must look on each of the three White-chested Dippers inhabiting the western Palæarctic Region as a clearly good species, though I admit that they resemble each other very closely in habits, note, and mode of nidification, except that *C. albicollis* appears to build an open nest; and in those portions of their range where two species meet, it is not impossible that specimens may be found almost forming a connecting link between the two. After having, however, examined a large series of Dippers from most parts of Europe, I can clearly see that they are easily divisible into the three fairly distinguishable species or local races which I have recognized as distinct, each of which inhabits a certain restricted area; and I can thus fully confirm the views expressed by Mr. Osbert Salvin in his excellent paper on the genus *Cinclus* (*Ibis*, 1867, p. 109), in which he recognizes these three species as distinct.

The present Dipper is the one found in Southern Europe, from the Iberian peninsula to Palestine, and is also met with in Algeria. I have not had an opportunity of examining a specimen from Portugal, where, doubtless, the Dipper will be found to belong to the present species, and where, according to Professor Barboza du Bocage, it is rare. In Spain, Mr. Howard Saunders writes (*Ibis*, 1872, p. 209), it "frequents the higher mountain-streams, but is nowhere numerous. My specimens from the Sierra Nevada appear to be of the ordinary type; but two I have received from Santander, in Asturias, are *Cinclus melanogaster*, which is, I believe, also found in the Pyrenees." To this I may add that I have examined the specimens above referred to by Mr. Saunders, and cannot agree with him that they belong to the black-breasted race; on the contrary, they are only rather dark specimens, probably young birds, of the present species, having but little trace of rufous coloration on the breast. Lord Lilford also observed it in Spain, and writes (*Ibis*, 1866, p. 390), that "it is common on the Eresma and the other mountain-streams of this district." It would seem as if both this race and also typical *C. aquaticus* occur in the south of France, as Jaubert and Barthélemy-Lapommeraye remark that those found at a higher elevation are browner than those met with by the streams of the Var and Basses-Alpes; and they further state that the latter (*C. aquaticus*) are migratory, passing through Provence in September and October, and again in April. Bailly states that in Switzerland and Savoy the Dipper is resident, and that it is subject to some slight variation in colour and length of tail-feathers. All I have examined from Switzerland and Italy belong to the present species, and not to *C. aquaticus*. Bettoni writes that it breeds in Lombardy; Salvadori and Savi record it as abundant in all the mountain-streams of Italy; and Doderlein states that it is resident, but somewhat rare, in Modena, being likewise resident in Sicily, and tolerably abundant in suitable localities. Professor Doderlein remarks that Sicilian specimens have much less rufous on the abdomen than is the case with examples from the main continent; and I suppose that the birds he refers to are similar to the somewhat dark-breasted varieties of the present species from the Pyrenees and Spain.

Lord Lilford found the Dipper common on the mountain-streams of Albania and Epirus; and Lindermayer includes it in his work on the ornithology of Greece as a tolerably common resident in that country. Specimens I have examined from Greece are somewhat small in size, and, if any thing, rather paler in colour than Swiss examples.

To the eastward the present species is found in Palestine, where, Canon Tristram writes (*Ibis*, 1866, p. 291), "it can only claim a place in the list from its occurrence in the mountain-torrents in the recesses of the Lebanon. In the Nahr el Kelb, Nahr Ibrahim (Adonis), and Ain Fijeh it is not uncommon."

It has also been met with in Algeria, where, according to Loche, it is of very rare occurrence. Mr. Taczanowski obtained a specimen in the Province of Constantine, between Ghelma and Mehuna, in the month of December; and Mr. J. H. Gurney, jun., writes (*Ibis*, 1872, p. 78) that he "met with four or five on a stream near Blidah," from which locality I have one specimen belonging to Canon Tristram, the type of his *Cinclus minor*.

In habits, note, food, and mode of nidification the present species agrees closely with *Cinclus aquaticus*, except that, according to Mr. Alston, who carefully examined the series of nests in the collection of Count Turati, the present bird appears always to build an open nest, and not a domed one as does *C. aquaticus*. The nest figured by Bettoni (*op. cit.*) is clearly an open one; and Mr. Alston assures me that all those in the collection above referred to, all taken in Italy, and thus belonging to the present form, are open.

The specimen figured, on the same Plate with *C. melanogaster*, is also the one described, and is in my collection.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a. Switzerland (*Dr. Kutter*). *b.* St. Gothard (*M. Nager Donaziano*). *c.* ♂. Piedmont, February 1869. *d.* ♂, *e.* ♀. Piedmont, October 1871 (*Salvadori*). *f.* ♀. Piedmont. *g.* juv. Parnassus, July 10th, 1866 (*Dr. Krüper*). *h.* ♂. Macedonia, October 16th, 1869 (*Dr. Krüper*). *i.* ♀. Macedonia, November 8th, 1869 (*Dr. Krüper*).

E Mus. Howard Saunders.

a. *b.* Ursern, Switzerland, 1868 (*F. N. D.*). *c.* ♂, *d.* ♀. Cabuerniga, Santander, August 1869. *e.* *f.* Sierra Nevada, 1869. *g.* ♂. Rio Genil, Granada, December 1872.

E Mus. H. B. Tristram.

a. ♀. Blidah, Algeria, February 9th, 1870 (*J. H. Gurney, jun.*). *b.* ♀. Near the Bone-caves of Lebanon, November 25th, 1863 (*H. B. T.*). *c.* *d.* Eaux Chaudes, Basses-Pyrénées, July 27th, 1867.

E Mus. Feilden and Harvie Brown.

a. ♂. Vosges, France, January 11th, 1873.

E Mus. Baron A. von Hügel.

a. ♀. Ursern, Switzerland, 1871.

Subfamily *SAXICOLINÆ*.Genus *SAXICOLA*.

Vitiflora apud Brisson, Orn. iii. p. 449 (1760).

Motacilla apud Linnæus, Syst. Nat. i. p. 332 (1766).

Muscicapa apud Gùldenstädt, Nov. Com. Petr. xix. p. 468 (1775).

Turdus apud Gmelin, Syst. Nat. i. p. 820 (1788).

Saxicola, Bechstein, Orn. Taschenb. i. p. 217 (1802).

Vitiflora apud Stephens, Gen. Zool. x. p. 530 (1817).

Ænanthe apud Vieillot, Nouv. Dict. xxi. p. 418 (1818).

Sylvia apud Vieillot, Tabl. Encycl. ii. p. 485 (1820).

Dromolæa apud Bonaparte, Consp. Gen. Av. i. p. 303 (1850).

Lutucoa apud Paul von Wùrtemberg, fide C. L. Brehm, Vogelf. p. 225 (1855).

THE Chats form a very distinct group, on the one side allied to the true Thrushes through *Monticola*, which genus forms a connecting link between the two, while on the other side the genus *Saxicola* is closely related to *Ruticilla* and *Pratincola*; indeed the latter has been included in the genus *Saxicola* by many authors.

The Chats inhabit the Palæarctic and Ethiopian Regions; and one species (*Saxicola ænanthe*) has likewise been met with in the Nearctic Region, and is a regular summer visitant to Greenland.

In the article by Mr. Blanford and myself on the genus *Saxicola* (P. Z. S. 1874, pp. 213–241) we made out that this genus comprises altogether thirty-seven species, of which fourteen occur within the limits of the Western Palæarctic Region. But subsequent research tends to show that there are at least one or two more than this number; for Mr. Seebohm has lately ascertained from an examination of a larger series than we then had available, that *Saxicola capistrata*, Gould, is a perfectly good species, and should not be united with *Saxicola leucomela*. Mr. Seebohm wishes also to separate *Saxicola montana* from *Saxicola deserti* as having more white on the secondaries; but this appears to me not to constitute a sufficiently good specific characteristic.

The Chats are by no means good songsters, differing in this respect from the Thrushes. They are almost purely insectivorous, feeding chiefly on small insects which they pick up from the ground. They make more or less well constructed nests, either on the ground or in holes in walls or rocks, and deposit uniform blue or bluish white eggs, or else bluish spotted with red. *Saxicola leucura* and *Saxicola erythræa*, both of which lay spotted eggs, have them much paler than those of any other of the European species that I have seen. The generic characters of *Saxicola*, of which genus *Saxicola ænanthe* is the type, are as follows:—Bill straight, rather broad at the base, rather longer than the middle toe with claw, compressed, decurved, and more or less indented at the tip. Nostrils basal, supernal, and oval. Gape furnished with a few bristles. First primary very short, second shorter than the third and fourth, third or fourth the longest; coverts and scapulars short. Tail nearly even, the basal portion nearly always white or rufous. Tarsus long, covered in front by one long scale, to which succeed two or three shorter ones. Claws compressed, strong, and moderately curved; the outer toe partly united to the middle toe; lateral toes equal or subequal.



WHEATEAR.
SAXICOLA ÆNANTHE

SAXICOLA CENANTHE.

(COMMON WHEATEAR.)

- Vitiflora*, Brisson, Orn. iii. p. 449 (1760).
Vitiflora grisea, Brisson, tom. cit. p. 452, pl. xxi. fig. 2 (1760).
Vitiflora cinerea, Brisson, tom. cit. p. 454, pl. xxi. fig. 3 (1760).
Motacilla cenanthe, Linn. Syst. Nat. i. p. 332. no. 15 (1766).
Le Motteux de Sénégal, Buff. Ois. vi. p. 136 (1783).
Motacilla leucorhoa, Gm. Syst. Nat. i. p. 966 (1788, ex Buff.).
Sylvia cenanthe (L.), Lath. Ind. Orn. ii. p. 529 (1790).
Saxicola cenanthe (L.), Bechst. Orn. Taschenb. i. p. 217 (1802).
Motacilla vitiflora, Pall. Zoog. Rosso-As. i. p. 472. no. 112 (1811).
Cenanthe cinerea, Vieill. Nouv. Dict. xxi. p. 418 (1818).
Vitiflora cenanthe (L.), Boie, Isis, 1822, p. 552.
Saxicola rostrata, Ehr. Symb. Phys. Av. fol. aa (1829).
Saxicola libanotica, Ehr. tom. cit. fol. bb (1829).
Vitiflora septentrionalis, C. L. Brehm, Vög. Deutschl. p. 403 (1831).
Vitiflora grisea, C. L. Brehm, tom. cit. p. 405 (1831).
Vitiflora cinerea, C. L. Brehm, tom. cit. p. 405 (1831).
Saxicola cenantoides, Vig. Zool. Blossom, p. 19 (1839).
Vitiflora major, C. L. Brehm, Vogelfang, p. 224 (1855).
Saxicola leucorhoa (Gm.), Hartlaub, Orn. W. Afr. p. 64. no. 192 (1857).
Saxicola cenanthe grisea, A. E. Brehm, Verz. Samml. C. L. Brehm, p. 5 (1866).
Saxicola cenanthe cinerea, A. E. Brehm, ut suprà (1866).
Saxicola cenanthe septentrionalis, A. E. Brehm, ut suprà (1866).
Saxicola cenanthe alpestris, A. E. Brehm, ut suprà (1866).
Saxicola cenanthe melanoptera, A. E. Brehm, ut suprà (1866).
Saxicola cenanthe maritima, A. E. Brehm, ut suprà (1866).
Saxicola cenanthe crassirostris, A. E. Brehm, ut suprà (1866).
Saxicola cenanthe macrorhynchos, A. E. Brehm, ut suprà (1866).

Wheatear, *White-rump*, *Fallowsmich*, English; *Clacharan*, Gaelic; *Motteux cul-blanc*, French; *der Steinschmätzer*, German; *Tapint*, Dutch; *Caiada*, Portuguese; *Culiblanco*, Spanish; *Culbianco*, Italian; *Kuda-bianca*, Maltese; *Steensqvætte*, Danish; *Stajnstolpa*, Færoese; *Steindepill*, *Steinklappa*, *Grádilottur*, Icelandic; *Stensquätta*, Swedish; *Stendulp*, Norwegian; *Kivitasku*, Finnish; *Poputchick*, *Podorojnik*, Russian.

Figuræ notabiles.

D'Aubenton, Pl. Enl. 554. figs. 1, 2, 583. fig. 2; Werner, Atlas, *Insectivores*, pl. 64;

Kjærbølling, Orn. Dan. taf. xviii.; Frisch, Vög. Deutschl. taf. 22; Fritsch, Vög. Eur. taf. 21. fig. 20, taf. 25. fig. 12; Naumann, Vög. Deutschl. taf. 89. figs. 1, 2; Sundevall, Sv. Fogl. pl. xi. figs. 1, 2; Gould, B. of Eur. pl. 90; id. B. of G. B. ii. pl. 45; Schlegel, Vog. Nederl. pl. 88; Roux, Orn. Prov. pl. 198; Bettoni, Ucc. Lomb. tav. 54.

♂ *ad.* capite summo, nuchâ et dorso canis, fronte et superciliis albis, fasciâ a naribus per oculos et regione paroticâ nigris: remigibus et tectricibus alarum nigris vix rufescente marginatis: uropygio et supra-caudalibus albis: rectricibus centralibus nigris ad basin albis, reliquis in dimidio basali albis et in dimidio apicali nigris: corpore subtùs albo, pectore, hypochondriis et subcaudalibus vix cervino lavatis: subtectricibus alarum nigris albo apicatis: rostro et pedibus nigris: iride fuscâ.

♀ *ad.* a mare dissimilis corpore suprâ brunneo nec cano, alis et caudâ nigricanti-fuscis nec nigris, corpore subtùs albido, gulâ, gutture et pectore cum hypochondriis lutescente ferrugineo lavatis.

♂ *ptil. hiem.* fœminæ similis sed saturatior, remigibus et tectricibus alarum ferrugineo marginatis et caudâ brunnescente albido apicatâ.

Adult Male in spring (Skara, Sweden, 23rd April). Crown, nape, and back ashy grey, or dull French grey: forehead and a broad line over the eye white; lores and a broad patch through the eye and the auriculars black; wings and wing-coverts black, some of the feathers having very faint remains of fulvous edgings; rump and upper tail-coverts white; tail white at the base and black on the terminal portion, the central rectrices having the terminal half black, whereas the remainder have only the terminal third or rather less of that colour; underparts white on the breast, sides and under tail-coverts slightly washed with creamy yellow; under wing-coverts black, tipped with white; bill and legs black; iris dark brown. Total length about 6 inches, culmen 0.65, wing 3.82, tail 2.5, tarsus 1.1.

Adult Female in spring (Nubia, 8th April). Unlike the male, having the upper parts dull brown, with a greyish tinge, instead of pure grey, the black in the wings and tail replaced by blackish brown, in having no black patch through the eye, and the underparts washed with isabelline. It closely resembles *Saxicola isabellina*, but may be distinguished by the under wing-coverts, which are black, tipped with white, whereas in *S. isabellina* they are pure white.

Obs. An old female from Turkey has the back rather greyer than the above-described bird, the auriculars and lores are dark brown, and the line over the eye is whitish and very distinct.

Autumn plumage. In the autumn dress both male and female are much alike, resembling the female in summer plumage, but duller, and having the quills and wing-coverts broadly margined and tipped with fulvous, the tail also being finally tipped with dull whitish brown.

Obs. The present species being the type of the genus *Saxicola*, I give, as usual, a short review of this group, and have divided it into four sections, as was done in the article by Mr. Blanford and myself published in the last part of the P. Z. S. (1874, pp. 215-241).

Section I. *Back and shoulders in the males black or blackish.*

A. Uropygium rufescent.

S. lugubris, Rüpp. (Neue Wirbelth. p. 77, 1840). Throat and breast black. This species is known only from the Abyssinian highlands.

S. mæsta, Licht. (Verz. Doubl. p. 33, 1823). Breast white. This is the bird figured and described by me under the name of Tristram's Chat. It inhabits Algeria and Egypt.

3

B. Uropygium white.

a. All the underparts white.

S. vittata, Ehr. (Symb. Phys. fol. cc, 1829). A dark band from the lores to the shoulders. This is one of the least-known of the Chats; but it has been obtained in Bogos, Northern Abyssinia, Arabia, Turkestan. It has lately been well figured by Salvadori (Ann. Mus. Civ. Genova, iv. tab. ii. 1873).

b. Abdomen white, throat entirely black.

S. albonigra, Hume (Stray Feathers, i. pp. 2, 185, 1872). Head entirely black; sexes alike; wing 3·9 inches. Inhabits South-eastern Persia, Baluchistan, and Sindh.

S. picata, Blyth (J. As. Soc. Beng. xvi. p. 131, 1847). Differs from the preceding species in being smaller, the wing measuring 3·25 to 3·5 inches; and the sexes are dissimilar, the female having the upper parts brown and the underparts brownish white. It inhabits Persia, Baluchistan, and North-west India.

S. leucomela, Pall. (Nov. Com. Petr. xiv. p. 584, 1770). Head whitish above, sexes alike; under tail-coverts rufous, inner quill-webs black; outer tail-feathers black-tipped. Inhabits Southern and South-eastern Europe, Northern Africa, and Western Asia as far east as Persia.

S. morio, Ehr. (Symb. Phys. fol. aa, 1829). Head whitish above; sexes alike; under tail-coverts white or pale buff; inner quill-webs black; outer tail-feathers black-tipped. Inhabits Eastern Europe, North-eastern Africa, and Western and Central Asia, extending to North-western India.

S. monacha, Rüpp. (Temm. Pl. Col. pl. 359, fig. 1, 1825). Head white above; sexes dissimilar; bill elongate; outer tail-feathers white. Inhabits North-east Africa, Palestine, and Baluchistan; probably found throughout South-western Asia, in the desert region.

c. Lower parts, except crissum, entirely black.

S. leucura (Gm.) (Syst. Nat. i. p. 820, 1788). Head always black; general colour dull black; central rectrices white at base; female sooty brown. Culmen 0·86, tarsus 1·05. Inhabits Southern Europe and North-western Africa.

S. leucopyga (Brehm) (Vogelf. p. 225, 1855). Crown in adult white; general colour jet-black; central rectrices white at base; female similar to male. Inhabits Northern Africa and Palestine.

S. atmori, Tristram (Ibis, 1869, p. 206). Head black; general colour sooty black; central rectrices black throughout (distinguished from *S. leucura* by blacker rump and more black on the rectrices). Wing 4·1. Inhabits Damara Land, South Africa.

S. opistholeuca, Strickl. (Jard. Contr. to Orn. p. 60, 1849). Similar to *S. leucura*, but smaller. Culmen 0·6, tarsus 0·9. Inhabits North-western India.

Section II. *Back in the males black, shoulders white.*

S. monticola (Vieill.) (N. Dict. xxi. p. 434, 1818). Entirely black, except abdomen and shoulders. Inhabits South Africa.

S. arnotti, Tristr. (Ibis, 1869, p. 206, pl. vi.). Supercilium white; crown white and black intermixed; entire underparts black. Inhabits Adam Kok's New Land, South Africa.

S. leucomelæna, Burch. (Trav. in S. Afr. i. p. 335, note, 1822). Crown grey; rump, upper and under tail-coverts, base of rectrices, and abdomen white. Inhabits South Africa, Damara Land.

S. griseiceps, Blanf. & Dresser (P. Z. S. 1874, pp. 217, 233, pl. xxxvii. fig. 3). Head and nape ashy grey, otherwise not unlike the preceding species. Inhabits South Africa, Colesburg, Natal, and Transvaal.

Section III. *Back in the males cinereous.*

S. ænanthe (L.) (Syst. Nat. i. p. 332, 1766). A black mark through the eye; underparts whitish; wings black; sexes dissimilar. Inhabits Europe, Africa north of the equator, Siberia and Northern China,

North-western America, Eastern North America, and Greenland. Is fully treated of below in the present article.

- S. cinerea* (Vieill.) (N. Dict. xxi. p. 437, nec p. 418, 1818). No black mark through the eye; throat and breast pale cinereous; rump and outer edges of all tail-feathers, except central pair, white; second primary emarginate at tip. Inhabits South Africa.
- S. pollux*, Hartl. (P. Z. S. 1865, p. 747). No black mark through the eye; throat and breast cinereous; rump similarly coloured to the back; external edges of outer rectrices white; second primary emarginate at tip. Inhabits South Africa. Is figured P. Z. S. 1874, pl. xxxviii. fig. 1.
- S. castor*, Hartl. (P. Z. S. 1865, p. 747). No black mark through the eye; underparts cinereous throughout; rump and basal portion of tail-feathers, except the two central pairs, white; second primary not emarginate at tip. Inhabits South Africa, Colesburg, Eland's Post. Is figured P. Z. S. 1874, pl. xxxviii. fig. 2.
- S. diluta*, Blanf. & Dresser (P. Z. S. 1874, pp. 217, 234, pl. xxxix. fig. 1). No black mark through the eye; upper parts to the rump pale cinereous; rump and basal portion of all tail-feathers, except central pair, white; shoulders white or whitish; second primary not emarginate. Inhabits South Africa, Damara Land.

Section IV. *Back in the males neither black nor cinereous.*

- A. Interscapulary region in adult white in breeding-plumage; rufescent or greyish in winter; wings blackish; sexes dissimilar.

a. Underparts white in breeding-plumage.

- S. stapazina* (L.) (Syst. Nat. i. p. 331, 1766). A black band through the eye; throat white. Inhabits Southern Europe, Asia Minor, Persia, and Northern Africa.

b. Throat black.

- S. rufa* (Brehm) (Vög. Deutschl. p. 406, 1831). Black on the throat not extending far down the throat; upper parts white in summer, rufescent in winter. Inhabits South-western Europe, North-western Africa, occasionally straggling to Egypt and the Levant.
- S. melanoleuca* (Güld.) (Nov. Com. Petr. xix. p. 468, pl. 15, 1775). Black on the throat extending very far down, to the top of the breast; upper parts white in summer, rufescent in winter. Inhabits South-eastern Europe, North-eastern Africa, Asia Minor, Persia, and Yarkand.
- S. erythræa*, Ehr. (Symb. Phys. fol. cc, 1829). Black extending to the upper breast, and joining that colour on the flanks; upper parts white in summer, greyish in winter. Inhabits Algeria, Egypt, Palestine, Syria, Arabia, and Persia.

B. Feathers on the interscapulary region intermixed black and rufescent; wings black.

- S. bifasciata*, Temm. (Pl. Col. 472. fig. 2, 1825). Brown; throat and upper breast black; supercilium, lower breast, and abdomen rufous; tail entirely black. Inhabits South Africa.

C. Interscapulary region similarly coloured to wing-coverts.

a. Throat black.

- S. deserti*, Rüpp. (Temm. Pl. Col. 359. fig. 2, 1825). Upper parts sandy brown; lower parts from breast rufescent white; terminal half of outer tail-feathers black; tail-coverts whitish. Inhabits South-eastern Russia, Southern and Central Asia as far east as Central India and Yarkand, Northern and North-eastern Africa.
- S. xanthoprymna*, Ehr. (Symb. Phys. fol. dd, 1829). Upper parts cinereous brown; lower parts from breast whitish; tips of outer tail-feathers alone black; tail-coverts ferruginous. Inhabits North-east Africa and Arabia Petræa. Is figured in the present work under the name of the Red-rumped Chat.

b. Throat white; breast and crown black.

S. pileata (Gm.) (Syst. Nat. i. p. 965, 1788). Back reddish brown; rump ferruginous; abdomen whitish. Inhabits South Africa generally. Is figured in Levaillant's Ois. d'Afr. pls. 181, 182.

c. No black on underparts.

S. albicans, Wahlb. (Efv. K. Vet. Ak. Förh. 1855, p. 213). General colour pale isabelline grey above, white below; tail-coverts and base of all the tail-feathers white; second primary not emarginate at the tip. Inhabits Damara Land. This species closely resembles *S. schlegeli*, but may be distinguished by being paler in colour, by having the entire basal portion of the tail white, and by having the first long primary emarginate at the tip.

S. schlegeli, Wahlb. (Efv. K. Vet. Ak. Förh. 1855, p. 213). General colour pale isabelline grey above, white below; outer edges of external rectrices white; rump white; second primary emarginate at the tip. Inhabits Damara Land, South Africa. Is figured P. Z. S. 1874, pl. xxxix. fig. 2.

S. isabellina, Rüpp. (Atlas, p. 52, 1826). Sandy brown above, isabelline below; tail-coverts and base of outer tail-feathers white. Inhabits South-eastern Europe, Eastern and North-eastern Africa, and Western Asia as far east as North-western India.

S. bottæ, Bonap. (Compt. Rend. 1854, p. 7). Dull dark brown above; throat white; breast and abdomen ferruginous; base of outer tail-feathers white. Wing 3·7. Inhabits the highlands of Abyssinia, Sennaar, and probably Nubia. Is figured P. Z. S. 1874, pl. xxxvi. fig. 1.

S. heuglini, Finsch & Hartl. (Vög. N.O.-Afr. p. 259, 1870). Dark brown above; throat white; breast and abdomen ferruginous; base of outer tail-feathers white. Wing 3·35. Inhabits the highlands of Abyssinia. This species resembles the preceding, but is much smaller in size.

S. chrysopygia, De Fil. (Ann. Zool. Genov. ii. p. 381, 1863). Hair-brown above, brownish white below; tail-coverts rufous; base of outer rectrices ferruginous; first long primary not emarginate. Inhabits Persia, Baluchistan, North-western India.

S. galtoni (Strickl.) (Jard. Contrib. 1852, p. 147). Upper parts dark brown, lower parts pale brown; tail-coverts and base of outer rectrices ferruginous; first long primary not emarginate. Inhabits South Africa.

S. sinuata, Sundevall (K. Vet. Ak. Förh. ii. no. 3. p. 44, note, 1857). Upper parts brown, lower parts ashy brown; rump and extreme basal portion of rectrices rufous; first long primary very deeply emarginate near the tip. Inhabits South Africa.

All the Chats which occur in the Western Palæarctic Region are fully described and figured in the present work; and for fuller details respecting the other species, I may refer my readers to the article by Mr. Blanford and myself (P. Z. S. 1874, pp. 215-241) on the genus *Saxicola*.

OF all the Chats the present species has probably the most extensive range, being found throughout the entire Western Palæarctic Region, from Greenland down into Africa, and eastward through Siberia to Northern China; and it also occurs in Eastern North America and Behring's Straits. In Great Britain it is common, but locally distributed, throughout the United Kingdom, arriving late in February or early in March, and leaving again in September, some few stragglers occasionally remaining somewhat later. It is found in almost every part of England and Ireland where the nature of the country is suitable. On the west coast of England it is in parts rare; and Mr. Cecil Smith informs me that they seldom visit Taunton, in Somersetshire. During the seasons of migration it is most numerous on the large downs in the south of England, and breeds in abundance in some parts, especially where limestone is found. Speaking of its range in

Scotland, my friend Mr. J. A. Harvie Brown writes to me as follows:—"It is scarcely necessary to particularize the distribution throughout Scotland of so common a species as the Wheatear, further than to remark that it is especially partial to limestone districts. This fact was taken notice of by Mr. Selby so long ago as 1834, when he wrote of this bird in Sutherland (Edinb. New Phil. Journ. vol. xxxii. p. 286) 'generally distributed over the county, but I think most abundant in limestone districts.' To this we may add that in that county, at all events, the Wheatear is seldom found to ascend the mountains in the breeding-season above the line where the limestone ends and the granitic rocks begin. On one occasion only in Sutherland we found a pair of Wheatears breeding, at an elevation of 2700 feet, amongst granite boulders, on the summit of a mountain in Assynt. In other parts of Scotland we have found them at considerably higher elevations—but only rarely, where limestone existed in any quantities, lower down: or, in other words, the superior attractions which the limestone rock seems to offer apparently localizes the distribution of the species in many parts of Scotland to a very appreciable degree; and we are borne out in these remarks by Mr. Robert Gray, who tells us that he has observed the same fact in other parts of Scotland." In Greenland it has been frequently observed, and breeds there. Sir J. C. Ross observed one on the 2nd May, 1830, as far north as 70° N. lat., in Felix Harbour. In Iceland and the Færoes it is a common summer visitant, and breeds there in some abundance. Captain Feilden speaks of it as being "abundant throughout the Færoes as a breeding species, arriving in the middle of April and leaving in August. Its cheery presence and pleasing song enlivens the rugged hill-sides and cheerless tracts of stone over which the traveller by land in Færoe pursues his track. I have found it nesting not far from the shore, and at every elevation except on the bare tops of the highest mountains. The nest is usually placed under a stone; and in several instances I detected it by noticing the worn track which the bird had made in passing and repassing to the nest. I have taken nests with six and seven eggs in them, and have had them brought to me with eight." In Scandinavia it is a common summer resident, being found up into Lapland. Mr. R. Collett says that it is met with everywhere in Norway, from Lindesnæs to the North Cape, and on the coast as well as in the fells up to the edge of the snow-region; and it is also met with throughout Sweden, from the extreme south far up into Lapland. I found it common during the summer in every part of Finland I visited, and Mr. Meves says that it is equally numerous in Northern Russia; but Mr. Sabanæff writes to me that it is not so very common in Central Russia; he met with it in the Government of Perm, where it was less numerous than the Whinchat. It is numerous throughout Poland and the Baltic Provinces, in suitable localities; and Borggreve says (Vogelf. N. Deutschl. p. 98) that it is found during the summer throughout North Germany; he himself never observed it in the mountains, where, according to Gloger, it occurs at high altitudes. Mr. von Homeyer, however (J. f. O. 1870, p. 227), fully confirms Gloger's statement as to its occurrence in the mountains. It is, however, as elsewhere, somewhat locally distributed as a breeding species; and I may name that Mr. Sachse informs me that at Altenkirchen, in Rhenish Prussia, he only found three nests during the last twenty years. It arrives there, he says, about the middle of April, and leaves early in September; and Dr. E. Rey informs me that it arrives at Halle, in Saxony, between the 22nd of March and the 2nd of April. In Denmark, Belgium, and Holland it is common; and Baron von Droste Hülshoff says that it is common on the island of Borkum, and breeds there. In France it is

generally distributed during the breeding-season, but does not remain long in Provence, as it proceeds to the Basses-Alpes to breed. Dr. E. Rey met with it in Portugal in April; and the various authors on Spanish ornithology speak of it as common during the two seasons of migration. Colonel Irby informs me that at Gibraltar he observed the first on the 4th of March, and on the return migration the last were seen on the 13th of November, but he never found it breeding in Spain; and Mr. Howard Saunders (*Ibis*, 1871, p. 211) says that it is "a regular visitor in autumn and spring" to Southern Spain. In Switzerland and Savoy it is numerous during the summer; and Bailly remarks that a somewhat smaller race appears to inhabit the more arid portions of the mountains of Savoy. Savi records it as common during the summer in Tuscany; and Salvadori (*J. f. O.* 1865, p. 136) says that he has obtained specimens in the winter in Sardinia, between Scaffa and La Maddelena, and saw many in the spring in April. Professor Doderlein says that it passes through Sicily during the two seasons of migration, and a few pairs remain to breed in the more elevated districts. Mr. C. A. Wright records it from Malta, where, he says (*Ibis*, 1864, p. 165) it is "abundantly spread over the island in spring and autumn. In the former season it commences to appear in March, and in the latter in August." The late Captain R. M. Sperling (*Ibis*, 1864, p. 279) says that he met with it in "Greece, Rhodes, Candia—in fact, on all the islands and shores of the Mediterranean that I have visited, this little bird is to be seen both in summer and winter. In the ardent heats of summer they, together with the Bee-eaters, seem to enjoy the hottest rays of the sun on the most barren places, when every other bird is in the shade." Von der Mühle and Lindermayer, however, do not say any thing respecting its occurrence in Greece in winter, merely stating that it remains there during the summer. Mr. H. Seeböhm has lately sent me some interesting notes on the distribution of the present species and its allies in Greece, which it may not be out of place to insert here, though a large portion of these notes refer to the Isabelline Chat. He says that "the distribution of the Chats in the mountainous country on both sides of the archipelago is very interesting. The character of the scenery is almost precisely similar to that of the limestone districts of Derbyshire or North Wales, but of course on a much grander scale. The Parnassus, for example, rises about eight thousand feet above the level of the sea, and may be taken as a fair type of the scenery of Greece and Asia Minor. It may be conveniently divided into four regions, each of about two thousand feet elevation, and each having its own botanical and ornithological character. When I visited the Parnassus in May, the upper region was nothing but bare rock and snow. Below this district comes the pine-region. The whole country, however, is so full of rocks and stones, that most of the mountain-sides are but thinly planted with stunted pines, on the plateaux generally alternating with juniper-bushes. On these plateaux *Pratincola rubicola* is common, and *Saxicola oenanthe* is frequently seen, both species breeding there. Below the pine-region is the district where the peasants build their summer villages, a range of mountain-slopes upon which a coarse herbage struggles for existence amongst the rocks and stones which abound everywhere. Here the two Chats which I have mentioned disappear, and their place is taken by *Saxicola melanoleuca* and *S. stapazina*. These two Chats are the commonest birds in this district; and it is seldom that you cannot see three or four of them in a conspicuous position on the surrounding rocks. They in turn disappear as you descend into the valleys, the region of the vine and olive. In these sultry plains, where the winter villages of the peasants are scattered

up and down, you find only *Saxicola isabellina*. I did not meet with this bird in Greece, as we spent most of our time in the mountains; but Dr. Krüper assured me that it was occasionally found there. I found it common on the grassy banks of the Nymph, east of Smyrna, where its habits seemed exactly to resemble those of *Saxicola ænanthe*. It breeds in similar situations. I have a sitting of five eggs which Dr. Krüper took on the 17th of April. He took me to see the nest, which was built in an old mouse- or rat-hole, close to the river side. It was, as might be expected, a somewhat loose and carelessly constructed nest, composed almost entirely of sheep's wool, with a feather or two, and a little dry grass. It is a migratory bird in this district; and Dr. Krüper told me that he first saw it on the 25th of March, *Saxicola ænanthe* having arrived a fortnight earlier, and having gone up into the mountains to breed, at an elevation of perhaps 4000 feet above its oriental congener, which it otherwise so closely resembles in its habits. The eggs are a trifle larger in size, and slightly paler in colour, than a sitting of the eggs of *Saxicola ænanthe* which I obtained in the Parnassus in the following year; but the eggs of all the *Saxicolæ* vary in size and depth of colour, and I have British specimens of the eggs of *S. ænanthe* from which they could not be distinguished. They are without any spots; but Dr. Krüper informed me that he had taken eggs of *S. isabellina* in previous years with faint spots round the larger end."

The present species is common in Southern Germany, where, however, it does not breed in all parts; and Mr. E. Seidensacher told me that he only observed it in Styria during migration. In Turkey it appears to be common; and in Southern Russia it is said by Von Nordmann to be numerous in the steppes, but unknown in Ghouriel; and Mr. von Goebel records it (J. f. O. 1870, p. 446) as common in the Uman district in Southern Russia during the summer. It occurs in Asia Minor, and, according to Dr. Krüper, breeds near Smyrna. Canon Tristram never observed it in Palestine during the winter, but says that numbers arrived in March, and after a few days' sojourn passed on northwards; Mr. Wyatt met with it in the peninsula of Sinai, in the spring, and remarks that the females arrived a few days before the male birds. In North-eastern Africa it is common, being, according to Captain Shelley, numerous in Egypt and Nubia during the seasons of migration. Mr. Blanford observed it about Senafé and Adigrat, in Abyssinia, in March; Petherick obtained it at Kordofan; and Dr. A. E. Brehm records it from Khartoum. Mr. Chambers-Hodgetts obtained it in Tripoli; Mr. C. F. Tyrwhitt Drake speaks of it as being not rare during passage in Tangier and Eastern Morocco; and it is said by Loche to breed in Algeria, which statement receives confirmation from the fact that Mr. Salvin (*Ibis*, 1859, p. 306) shot one near Zana in June. Mr. Verreaux has obtained it from Senegal; and it has occurred on the Gambia. On the Canaries, according to Dr. C. Bolle (J. f. O. 1857, p. 279), it appears in large numbers some winters; and Mr. F. DuCane Godman says (*Nat. Hist. of the Azores*, p. 25), "I shot a single example of the Wheatear in Flores, after a strong gale of wind, and I at first believed it was a straggler from the continent; but I afterwards found four or five pairs in the old crater on Corvo, which had bred there, as I saw young birds that could scarcely fly. The inhabitants have no name for this bird, and I did not meet with any one who knew it; so I believe it to be a recent settler."

To the eastward the present species ranges right across Siberia to Northern China. Messrs. Dickson and Ross met with it at Erzeroom; Mr. Keith E. Abbott obtained it at Trebizond; and

Mr. Blanford brought back a large series from Persia. Severtzoff says that it is to some extent a migrant in Turkestan, but is also found breeding throughout the country. During the winter it occurs in the plains and in the Karatau and Thian-shan Mountains up to an altitude of about 6000 feet, and in the summer it frequents the Thian-shan range, and breeds from 6000 feet up to the line of eternal snow. In Siberia Von Middendorff met with it on the 5th of June on the Taimyr river, in $73\frac{1}{4}^{\circ}$ N. lat., and found it exceedingly numerous up to 75° N. lat. On the Boganida numbers were seen by him on the 17th of August; and he met with it in the Sajan Mountains, but not in South-eastern Siberia. Dr. G. Radde met with it everywhere when travelling towards Eastern Siberia, and says that it was common at Lake Baikal, but in the Transbaikal country it was much rarer, and on the elevated steppes it is entirely replaced by *Saxicola isabellina*. He found fledged young at Lake Baikal on the 10th of July, and says that he carefully compared his adult specimens with European Wheatears and found no difference. Dr. Dybowski records it as common in Dauria; and Mr. R. Swinhoe (P. Z. S. 1871, p. 360) says that it inhabits the central mountains of extreme Ordo (north-west of Pekin), where, according to David, it breeds. It occurs in India in the winter season, when it is said to be not unfrequent in the upper provinces; but Dr. Jerdon and several other ornithologists have confused *Saxicola isabellina* and the present species, which in winter plumage are not very dissimilar, and therefore it is rather difficult to define the range of the present species in that part of Asia. It is found in North America, in the north-western portion of the continent, and probably breeds in Alaska. Mr. Dall (B. of Alaska, p. 276) says that "several large flocks of this species were seen at Nulato, May 23rd and 24th, 1868, and a number of specimens obtained. They are reported to be abundant on the dry, stony hill-tops, where the deer congregate, but rare along the river." It has of latter years been met with in the eastern portions of North America, but not further south than New York. Professor Baird suggests that it may possibly breed in Labrador or Newfoundland; but Professor Newton remarks that Mr. Reeks did not observe it during his stay in the latter. It is recorded from the Bermudas by Major Wedderburn, who says that one was shot there on the 5th October, 1846; and Colonel Drummond-Hay and the latter gentleman saw a second in March 1850.

In its habits the Wheatear resembles its other allies, differing from the Stone-Chat and Whin-Chat in being a frequenter of open places, often almost barren localities, and especially plains. On arriving at the English coast they spread about the downs and open places near the sea-shore, and rest for a time before scattering throughout the country to their breeding-stations. Ornithologists living on the south coast of England say that the birds which arrive first vary in size from those which arrive later; but I find that the size of examples from various localities varies considerably, those from Greenland being the largest, whereas specimens from Palestine, and some from Egypt, are the smallest, intermediate forms being found from localities in various parts of Europe. The Wheatear does not perch on trees or bushes, but is essentially a ground-bird, hops on the ground with great ease, and is tolerably shy and exceedingly active and restless. When it stops it inclines its body slightly, and jerks its tail. Its flight is low and not powerful, and it keeps close to the surface of the ground, and alights before it has traversed any great distance. It is most frequently seen perched on a clod, a stone, or on a stone wall, and it exhibits a great predilection for stony localities. Its song is short, but sweet, and is uttered either whilst

the bird is fluttering in the air at no great altitude, or when seated on a stone or any elevated perch. It feeds, like its allies, entirely on insects of various descriptions, worms, small coleoptera, mollusca, &c. &c.

The flesh of the Wheatear being very delicate and tasty, large numbers are annually caught in the south of England and sold for the table, the shepherds being those who chiefly catch them, which they do by snares set for them under sods, cut and placed so as to form a hollow chamber with two openings, into which the bird runs upon the least alarm. These traps are set on the downs over which the flocks graze; and Professor Newton (Yarr. Brit. Birds, p. 350) says "one man and his lad can look after from five to seven hundred of them. They are opened every year about St. James's day, July 25th, and are all in operation about August 1st. The birds arrive by hundreds, though not in flocks, in daily succession for the next six or seven weeks, probably depending on the distance northward at which they have been reared. The season for catching is concluded about the end of the third week in September, after which very few birds are observed to pass. Pennant, more than a century since, stated that the numbers snared about Eastbourne amounted annually to about 1840 dozens, which were usually sold for sixpence the dozen; and Markwick, in 1798, recorded his having been told that, in two August days of 1792, his informant, a shepherd, had taken there twenty-seven dozens; but this is a small number compared with the almost incredible quantity sometimes taken, for another person told the same naturalist of a shepherd who once caught eighty-four dozens in one day." Of latter years, however, but comparatively few are caught, owing probably to the fact that large tracts of open common and partly waste land have been broken up and brought under tillage, so that the birds can no longer breed there; and the supply being so much curtailed they are now worth from three to four shillings a dozen.

The present species commences nidification with us in England from the middle to the end of April, and places its nest amongst any heap of stones, in a suitable cranny or crevice of a stone wall, in an old rabbit-burrow, or any hole in the ground, or merely under shelter of a clod or stone. Its nest is rather large, somewhat loosely constructed, and flat, and is built of dried grasses, moss, rootlets, &c., and lined with moss, feathers, hair, and wool. I frequently found the nests in Finland, and invariably found them in old stone-walls, most difficult to get at. In some localities they are said to breed in hollow trees; but I have never seen a nest thus placed. The eggs, from five to seven, or sometimes eight, in number, are pale blue, with a faint greenish tinge, usually unspotted, but sometimes marked with red dots. Dr. E. Rey informs me that he generally finds about ten per cent. thus marked. In shape they are oval, somewhat elongated, and tapering towards one end, and measure from $\frac{3.2}{4.0}$ by $\frac{2.3}{4.0}$ to $\frac{3.6}{4.0}$ by $\frac{2.6}{4.0}$ inch.

The specimens figured are a male in full breeding-plumage, and very pure in colour, from Sweden, an adult female from Nubia, and in the background an adult male, in autumn dress, from Turkey, all being in my own collection.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a, ♂. Pagham, May 4th, 1870. *b*, ♂. Pagham, April 23rd, 1870. *c*, ♀. Pagham, April 26th, 1872. *d*, *e*, *f*, *g*, *h*, *i*, *j*. Pagham, July 1870. *k*, ♂, *l*, ♂, *m*. Hampstead, 1870 (*Davy*). *n*, ♂. Grantham, July 8th, 1866. *o*, ♂, *p*, ♂. Skara, Sweden, April and May 1870. *q*, ♀. Skara, September 10th, 1870. *r*, ♂. Archangel, May 16th, 1873 (*Piottuch*). *s*. Spain (*H. Saunders*). *t*, ♂. Maslak, Turkey, April 1st, 1869 (*Robson*). *u*, ♂. Ortakeuy, September 26th, 1869 (*Robson*). *v*, ♂, *w*, ♀, *x*, ♂. Crimea (*Whitely*). *y*, ♂, *z*, ♀. Tripoli (*Chambers*). *aa*, ♂. April 5th. *bb*, ♂. Egypt (*E. C. Taylor*). *cc*. Alexandria (*S. S. Allen*). *dd*, ♀. Nubia, April 8th, 1870 (*G. E. S.*). *ee*, ♀. Asia Minor, April 8th, 1865 (*Robson*). *ff*. Syria (*Hemprich and Ehrenberg*).

E Mus. Lord Walden.

a, ♂. Hampstead, May 7th, 1869 (*Davy*). *b*. Hampstead, September 13th, 1869 (*Davy*). *c*. Highgate, August 31st, 1869 (*Davy*). *d*, ♂, *e*, ♂. Asia Minor, April and May, 1865 (*Robson*). *f*, ♂. Mount Carmel, March 24th, 1864 (*H. B. T.*). *g*. Greenland.

E Mus. Ind. Calc.

a, ♂, *b*, ♀. Summer plumage. *c*, ♀, *d*, ♀, *e*, ♀. September. *f*, ♂. Near Shiraz, November 1870 (*St. John*). *g*, ♂, *h*, ♂, *i*, ♀. Elburz mountains, N. Persia, August 1872, 8000 to 9000 feet (*W. T. Blanford*).

E Mus. H. B. Tristram.

a, ♂, *b* ♂. Top of Hermon, June 2nd, 1864. *c*, ♀. Ain Beida, May 2nd, 1857. *d*, ♀. Surghaya, June 13th, 1864. *e*, ♂. Mount Carmel, March 22nd, 1864 (*H. B. T.*).

E Mus. E. Hargitt.

a, ♂. Fulham, August 29th, 1873. *b*, ♂. Havre, April 20th, 1873. *c*, ♂. Havre, May 18th, 1873. *d*, ♂. Havre, May 29th, 1873. *e* (young). Havre, July 1873. *f*, ♂. Havre, August 31st, 1873. *g*, ♂. Havre, August 22nd, 1873. *h*, ♂, *i*, ♂. Havre, September 4th, 1873.

E Mus. G. E. Shelley.

a. England, August 17th, 1870 (*G. E. S.*). *b*. Tangier, March 23rd, 1873 (*G. E. S.*). *c*, ♂, *d*, ♂, *e*, ♀. Egypt, March 30th, 1868 (*G. E. S.*). *f*, ♀. Egypt, April 6th, 1868 (*G. E. S.*).

E Mus. A. Newton.

a, *b*. Greenland, May 1862 (*Dr. J. Taylor*). *c*, ♂. S.W. Iceland, July 12th, 1858 (*A. N.*).



ISABELLINE CHAT.
SAXICOLA ISABELLINA

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SAXICOLA ISABELLINA.

(ISABELLINE CHAT.)

Motacilla strapazina, Pall. Zoogr. Rosso-As. i. p. 474 (1811, nec *stapazina*, Linn.).*Saxicola isabellina*, Rüpp. Atlas, p. 52, pl. 34. fig. 6 (1826).*Saxicola saltator*, Ménétr. Cat. Rais. p. 30 (1832).*Saxicola squalida*, Eversm. Add. Zoog. Rosso-As. p. 16 (1835).*Saxicola saltatrix*, Keyserl. & Blas. Wirbelth. Eur. p. 192 (1840).*Saxicola olivacea*, Rüpp. fide Bp. Conspect. Gen. Av. p. 303 (1850).*Saxicola strapazina* (Pall.), Eversm. Journ. für Orn. 1853, p. 288.*Vitiflora saltatrix*, C. L. Brehm, Vogelfang, p. 225 (1855).*Isabelline Chat*, Ménétries's *Wheatear*, English; *Conek*, Russian.*Figuræ notabiles.*Rüppell, *l. c.*; Bree, B. of Eur. pl. to p. 136.

♂ *ad.* suprâ pallidè brunnescenti-arenarius vix cinereo lavatus, subtùs albicanti-isabellinus : pectore saturatiore : gulâ et abdomine centrali albis : loris nigricantibus, supra oculos ad basin rostri striâ albidâ : regione paroticâ dilutè fuscâ : remigibus saturatè brunneis, tectricibus et secundariis latè, primariis strictè e cinereo ochraceo marginatis : rectricibus centralibus nigricanti-brunneis, ad basin albis, reliquis dimidio basali albis, dimidio apicali nigricanti-brunneis, omnibus vix albido apicatis : supracaudalibus, subcaudalibus et subalaribus albis : rostro et pedibus nigris : iride fuscâ.

♀ *ad.* mari similis sed paullo sordidior, loris pallidioribus.

Adult Male (Egypt, 17th February). Upper parts pale sandy brown with a greyish tinge; underparts white, washed with pale isabelline, the breast darkest, being of a warm creamy tinge; throat and centre of abdomen almost pure white; lores black; above the lores from the base of the bill to the centre of the eye a dull white broad streak; quills dark dull brown on the outer web, and at the tip bordered with pale rufescent isabelline, which is very narrow on the outer primaries, but conspicuous on the inner ones, secondaries, and wing-coverts; upper tail-coverts pure white; central rectrices white on the basal third, otherwise blackish brown, remainder with the white extending over the basal half, all being narrowly tipped with dirty white; under wing-coverts and axillaries white; bill and legs black; iris brown. Total length about 6 inches, culmen 0.62, wing 3.9, tail 2.5, tarsus 1.2.

Adult Female (Egypt, 14th March). Similar to the male; but the lores are much duller black, and in general colour the bird is somewhat duller.

Nestling (Smyrna, 25th May). In general arrangement of colour resembling the parents, but darker; head and nape very indistinctly marked as if striated; throat and breast very finely marked here and there with small black lines; wings and tail broadly margined and tipped with rufous.

Autumn plumage (♂, Shiraz, September). Upper and underparts darker, throwing out the black lores and white chin and line above the lores in strong relief; breast, flanks, and, to a less extent, the rest of the underparts washed with pale rufous.

THE Isabelline Chat is found throughout Southern (or rather South-eastern) Europe, Asia Minor, North-eastern Africa, and Eastern Asia. It has not been recorded from Central or Northern Europe, and has never occurred in Great Britain, or, so far as I can ascertain, in Western Europe. Erhardt says that it is found on the islands of the Greek archipelago, but neither Von der Mühle nor Lindermayer confirms this statement. It has also been said by C. L. Brehm to occur in Dalmatia; but this statement likewise requires confirmation. It occurs in Southern Russia—and is said by Jacovleff to be very common throughout the province of Astrachan, arriving early, and nesting in the holes of the steppe-rodents as well as in rocky localities close to the town of Astrachan. According to Ménétries (Cat. Rais. pp. 30, 31) it is very common on the arid plains of the Caspian, especially near Bakou, close to the everlasting fires; it was usually met with in pairs, and is continually running about. It perches on the tops of the rocks, and when there rises perpendicularly, fluttering and uttering its call-note *zri, zri, zri*, which is very loud and deep in tone. When wounded it hides immediately in the cleft of the rocks. In Asia Minor it is common, and breeds near Smyrna, whence I have its eggs taken by Dr. Krüper, who writes (J. f. O. 1869, p. 35) that it arrives in the neighbourhood of Smyrna early in April and leaves after the breeding-season. Though about seven or eight years ago (as Dr. Krüper informs me in a letter just received) it used to breed in numbers in the neighbourhood of Turbali, it appears not to do so now, and this last season he did not find a single nest. He heard of one; but on visiting the locality, which was close to the village of Hadschilar, he found that it had been taken, and the old bird destroyed. Herr von Gonzenbach, however, procured both young birds and eggs. Canon Tristram records it from Southern Palestine; and Mr. W. J. Chambers-Hodgetts obtained it on entering Palestine on the south, at El Arish. Canon Tristram says that it is a resident in the southern part of the wilderness of Judæa, and he found nests early in June containing hard-set eggs. In North-east Africa it is common, and, according to Captain Shelley, resident throughout Egypt and Nubia; and the late Mr. Stafford Allen told me that he found it numerous near Cairo. Antinori (J. f. O. 1866, p. 240) records it as once observed at Galabat and once at Kordofan. Petherick also records it from Kordofan; and Captain Speke (Ibis, 1860, p. 247) met with it on the plateaux in the Somali country. Von Heuglin (Ibis, 1859, p. 341) says that he found it in the Danakil country, between the peninsula of Buri and the Gulf of Tadjura, the Somali coast and Southern Arabia. Mr. Jesse obtained a specimen at Zoulla, in Abyssinia, in March, but did not observe it elsewhere. It was, he says, rather plentiful about Zoulla then, but was not seen in May or June, nor at Massuah in August. Mr. Blanford also refers to it as being common on the highlands of Abyssinia and in the plains on the coast until the middle of March; and Von Heuglin (Orn. N.O.-Afr. p. 345) says that it breeds in that country in February, and he found a nest containing two eggs in the mountains of Semién, at an altitude of 10,000 feet, on the 28th of that month. He also saw half-fledged young at Gondar in February.

To the eastward the Isabelline Chat is found in North-west India and Siberia to China. Messrs. Blanford and St. John brought back a large series from Persia and Baluchistan; and I

have before me a number of specimens from the North-west Provinces of India, chiefly obtained by Mr. W. E. Brooks. Dr. Jerdon writes (B. of Ind. ii. p. 132) that he obtained a specimen from near Mhow in the cold season, and that it is known to be found, though rarely, in the Upper Provinces; and Mr. A. O. Hume says, "though common enough throughout Sindh, it was by no means so numerous there as it is everywhere in the North-western Provinces, the Punjaub, and Rajpootana."

Mr. Severtzoff, who met with it in Turkestan, records it (Turk. Jevot. p. 65) as found, in the north-eastern part of the country, at Semirechje, Issik-kul, the Upper Narin, Aksay, Copal, and Vernoe—in the south-eastern districts, at Chu, Djungal, Susamir, the lower Narin, Sou-kul, and Chatir-kul—and, in the north-western districts, at Karatau, the western Thian-shan, Aris, Kalles, Chir-chik, and the Syr-Darja—in most of which places it was found breeding. During migration it is found in the mountains, at an elevation of from 3000 to 4000 feet, and breeds at from 4000 to 10,500 feet above the sea-level. Dr. G. Radde met with it in Siberia, and says that it arrives there earlier than *Saxicola œnanthe*, the first arrivals at the Tarei-nor taking place on the 9th March. In the Selenga valley, sixty miles north of Kjachta, he first observed them on the 8th April; but at the more elevated locality of Tunka they did not appear till the 23rd April, old style. Specimens killed near Kulussutajefsk, on the 23rd August, were in moult. Von Schrenck also says that Mr. Maack obtained specimens on the 19th April, old style, on the banks of the Nertcha river, on the upper part of the Amoor. According to Dr. Dybowski (J. f. O. 1872, p. 435) it "breeds in the steppes of Dauria, placing its nest in deserted holes of *Lagomys ogotoma* and *Spermophilus eversmanni*."

Père David met with it in Northern China, where it inhabits the elevated plains near Peking, and nests in the deserted holes of *S. mongolicus*, as it does in Dauria and other localities.

In its habits the Isabelline Chat closely resembles its near ally, *S. œnanthe*. It is said to sing well; and, according to Dr. Radde, its song commences with a croaking note like a Shrike's call, which is followed by the whistling tones. Its breeding-habits, nest, and eggs have only been known during the last few years; and its eggs are even now very rare in collections. Dr. Krüper published some excellent notes on its nidification in the 'Journal für Ornithologie' (1869, p. 35), from which I extract the following particulars:—"On the 24th April, 1867, Mr. Schrader shot the first specimen, a male, behind the village of Narlikevi; and on the 2nd May I shot a male, and had an opportunity of watching a pair which were breeding. Between Burnova and Narlikevi there is a large piece of fallow ground, on which the cattle and camels were allowed to graze; and in the centre of this a pair of these Chats had established their breeding-quarters. As there were no stones near, I immediately surmised that the nest must be in the ground. The Asiatic mole (*Spalax typhlus*) had tunnelled under the ground so extensively that in many places the earth had given way under the feet of the cattle. In one of these places I saw the footprints and droppings of the Chat, and supposed that the nest must be there. Several days later I dug out a last-year's nest, in which was a skeleton of a bird; and soon after I lost sight of the birds. On the 22nd May I found a nest at Turbali, which was also in a mole-hole which had been cut through in making the railroad; and in it I found nearly fledged young. In 1868 I did not succeed in finding any eggs. The pair appeared again at Narlikevi, but I could not find the nest until later. On the 16th May I saw one of the birds sitting quietly on a

bush; I shot it, and it proved to be the female, which had evidently been sitting. Eight days later I saw the male fly off the nest, which contained nearly fledged young. It was in the entrance to a mole-hole, well concealed amongst the herbage. I uttered a low hissing sound; and a young bird came out, but, on seeing me, immediately bolted back. . . . During the breeding-season it frequents the plains, which remain year after year uncultivated. Its song during the breeding-season is powerful, and rich in tone; it is usually uttered from a branch of a bush, or a telegraph-wire, or whilst the bird is fluttering in the air. Sometimes it whistles like a shepherd or a Sandpiper. The young remain together in families, frequenting the dry ditches or bushes near them; and during the heat of the day and at night they retire to deserted Jackal-holes, where also, doubtless, the old birds often breed."

I do not possess the nest of this Chat, which Herr von Heuglin describes as being "tolerably bulky, and lined with soft dried grasses;" but I have eggs from Astrachan, and from near Smyrna, the latter taken by Dr. Krüper. These closely resemble the eggs of *Saxicola ænanthe*, but appear, judging from the series of each in my collection, to be, as a rule, a trifle stouter. In size they measure from $\frac{3.2}{4.0}$ by $\frac{2.7}{4.0}$ to $\frac{3.4}{4.0}$ by $\frac{2.6}{4.0}$ inch.

As the sexes of this Chat are so nearly alike, I have deemed it best to figure an adult female in spring plumage, together with a nestling, both being the specimens described and in my collection.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a, ♂. Egypt, February 17th, 1863 (*S. S. Allen*). *b*. Egypt (*Rogers*). *c*. Ghizeh, Egypt, March 14th, 1863 (*S. S. Allen*). *d*. Palestine, June 15th, 1864 (*Tristram*). *e*, ♀. Smyrna, Asia Minor, May 30th, 1871. *f*, *g*, *juv.* Smyrna, Asia Minor, May 24th, 1871. *h*, *juv.* Smyrna, Asia Minor, June 1st, 1864. *i*, *k*, *l*, *juv.* Smyrna, Asia Minor, May 25th, 1871 (*Dr. Krüper*). *m*, ♂. Central Asia (*Severtzoff*). *n*, ♂. Burtina, India, January 19th (*W. E. Brooks*). *o*, ♀. Lahore, India (*Marshall*). *p*, ♂. Etawah, India, December 18th, 1869 (*W. E. Brooks*).

E Mus. Ind. Calc.

a, ♀, *b*, ♀. Gwadar, Baluchistan, December 1871. *c*, ♀. Pahara, Baluchistan, April 1st. *d*, ♀. Shiraz, June 1869. *e*, ♂. Shiraz, September 1870. *f*, ♀. S.E. Persia, April 20th, 1872 (*W. T. Blanford*).

E Mus. Lord Walden.

a, ♀. Zoulla, Abyssinia (*Wm. Jesse*). *b*, ♂. Chenkent, March 14th, 1866 (*Severtzoff*). *c*, ♀, *d*, ♀, *e*, ♀. North-west India. *f*, ♀. Umballah, India, October 1866. *g*, ♂. Umballah, India, November 1866 (*Beavan*). *h*, ♀. Rasheiya, Palestine, June 1st, 1864 (*H. B. Tristram*). *i*, *k*. R. Lahore, India (*Marshall*).

E Mus. H. B. Tristram.

a, ♀. Mt. Tabor, Palestine, March 10th, 1864 (*H. B. T.*). *b*, ♂. Mt. Hermon, Palestine, June 4th, 1864 (*H. B. T.*). *c*. Fort of Hermon, Palestine, June 2nd, 1864 (*H. B. T.*). *d*, ♂. Beersheba, Palestine, February 3rd, 1864 (*H. B. T.*). *e*, ♀. Jordan, Palestine, January 6th, 1864 (*H. B. T.*). *f*, ♂. Egypt, February 5th, 1852 (*H. B. T.*). *g*, ♂. Burtina, N.W. India, January 28th, 1869 (*Brooks*). *h*. Etawah, N.W. India, November 1869 (*Brooks*).



BLACK-EARED CHAT.

SAXICOLA STAPAZINA

SAXICOLA STAPAZINA.

(BLACK-EARED CHAT.)

Red or Russet-coloured Wheatear, Edw. Nat. Hist. p. 31, pl. 31 (1743, partim).*Ficedula vitiflora rufescens*, Briss. Orn. iii. p. 457. no. 36, pl. 25. fig. 4 (1760).*Ficedula vitiflora rufa*, Briss. tom. cit. p. 459. no. 37 (1760, partim).*Motacilla stapazina*, Linn. Syst. Nat. p. 331. no. 14 (1766, ex Edw.).*Sylvia stapazina* (L.), Lath. Ind. Orn. ii. p. 530. no. 80 (1790).*Sylvia stapazina* β , Lath. tom. cit. p. 530 (1790).*Vitiflora rufa*, Steph. Gen. Zool. x. p. 569 (1817).*Ænanthe albicollis*, Vieill. Nouv. Dict. xxi. p. 424 (1818).*Saxicola aurita*, Temm. M. d'Orn. i. p. 241 (1820).*Sylvia albicollis*, Vieill. Tabl. Encycl. des trois Règn. de la Nat. ii. p. 485 (1820).*Sylvia rufescens*, Savi, Orn. Tosc. i. p. 223 (1827).*Saxicola amphileuca*, Ehr. Symb. Phys. fol. 66 (1829).*Saxicola aurita*, var. *libyca*, Ehr. tom. cit. pl. aa (1829).*Vitiflora aurita* (Temm.), Bp. Comp. List B. of Eur. & Am. p. 16. no. 125 (1838).*Vitiflora aurita* auct., C. L. Brehm, Vogelfang, p. 224. no. 6 (1850).*Vitiflora assimilis*, C. L. Brehm, tom. cit. p. 224. no. 7 (1850).*Traquet oreillard*, French; *Caiada*, Portuguese; *Ruiblanca*, *Sacristan*, Spanish; *Dumnikan*, Maltese; *Culu-brancia*, *Monachella*, Italian.*Figuræ notabiles.*

Edwards, *l. c.*; Brisson, *l. c.*; Werner, Atlas, *Insectivores*, pls. 68, 69, 70, 71; Gould, B. of Eur. pl. 92; Naumann, Vög. Deutschl. taf. 376. figs. 1-3; Bree, B. of Eur. pl. to p. 128; Roux, Orn. Prov. pl. 200; Temm. Nouv. Rec. Pl. Col. pl. 257. fig. 1.

♂ *ad. æst.* albus, fronte, loris, regione ophthalmicâ et paroticâ alisque nigris: rectricibus centralibus nigris, ad basin albis, reliquis albis, apice dimidioque apicali pogonii externi primæ nigris: pectore vix rufescente lavato: rostro et pedibus nigris: iride fuscâ.

♀ *ad. æst.* capite suprâ et dorso brunnescenti-griseis: alis brunnescenti-nigris, tectricibus alarum vix fulvido marginatis: caudâ ut in mare picturatâ: loris, regione ophthalmicâ et paroticâ brunnescenti-nigris, vix fulvido notatis: corpore subtus albo: pectore rufescente lavato: pedibus et rostro nigris.

Adult Male in breeding-plumage (Smyrna, April 17th). A narrow frontal line at the base of the bill, lores, region round the eye, auricular space, including a large patch on the side of the neck, wings, scapulars, and wing-coverts jet-black; crown, neck, back, rump, and upper tail-coverts, throat, and entire underparts white, faintly clouded with pale rufous on the breast and back; quills somewhat paler towards the tips of the feathers, some of the secondaries slightly tipped with dull brownish white; central tail-

feather white on the basal third, otherwise jet-black, the outermost feather similar, but the white extends over about half the feather, remaining rectrices white, very broadly tipped with black; under wing-coverts black; legs and bill black; iris brown. Total length about 5·5 inches, culmen 0·62, wings 3·5, tail 2·65, tarsus 1·0.

Adult Male in spring (Seville, March 18th). Differs from the specimen last described in having the centre of the crown, nape, and back rich pale creamy rufous, the breast being of the same colour, but somewhat paler, and the entire underparts being washed with a pale rufescent tinge.

Adult Male in autumn (Shiraz, Persia, September). Differs from the summer plumage in having the crown dull brown, and the back dirty brown, intermixed with white, the secondaries and wing-coverts broadly margined and slightly tipped with rufous, the primaries also having scarcely perceptible rufous tips; breast creamy rufous.

Adult Female in summer (Smyrna, June 20th). Differs from the male in having the crown, nape, and back dull brownish grey, the patch on the side of the head and wings much duller, being brownish black, not black, upper wing-coverts slightly tipped with rufous; underparts white, marked with rufous on the breast.

Young of the year (Shiraz, September). Head and back light buffy brown, all the feathers being slightly margined with darker brown, giving a sort of spotted appearance; rump and upper tail-coverts white; tail as in the adult, but washed with buff at the tip; wings blackish, the primaries narrowly, and the secondaries and wing-coverts broadly margined and tipped with rufous; breast like the back, but lighter; throat and remainder of the underparts dirty buffy white.

Obs. As is the case with all the Chats of this group, the present species often has the white on the back and breast obscured or replaced by a rich rufescent cream-tinge, which appears to form its winter livery; and in all plumages there is some slight trace of this colour either on the back or the breast. An adult male, obtained at Genoa late in July, has the plumage much worn and faded, and the back and breast are slightly clouded with dull rufous ochre, showing the gradual assumption of the winter dress. A specimen obtained in Persia in September appears to be in full winter dress, and has the crown and back dull brownish grey, the breast and underparts washed with rufous, and the secondaries and wing-coverts margined with rufous. Specimens which are shot in Northern Africa on the spring migration, and when they first arrive in Europe, have the entire back and breast rich rufescent cream, as described above, and figured on the foreground in the Plate.

THE Black-eared Chat is found in Southern Europe, Asia Minor, Persia, and Northern Africa. In France it is only met with in the southern departments, and even in Provence, where it breeds, it is, Messrs. Jaubert and Barthélemy-Lapommeraye write, by no means numerous. It is included by Professor Barboza du Bocage in his list of the birds of Portugal as common; and it is likewise numerous in Spain, though not so much so as the Russet Chat. Lord Lilford met with it on the hills near Aranjuez; and Mr. Howard Saunders informs me that "it arrives in the south of Spain towards the end of March, and commences nidification about the middle or latter part of April. It appears more partial to the tablelands amongst the hills than *Saxicola rufa*; and I found it particularly abundant amongst the higher vineyards in Aragon." It nests, Major Irby informs me, "in the cork woods near Gibraltar; but the majority pass on during March and April." It does not appear to be common in Italy, as Count Salvadori merely states (J. f. O.

1865, p. 136) that an individual now and then is observed during the spring. It is found in Liguria and in the neighbourhood of Rome, but is not very generally distributed; and, according to Doderlein, it appears to be tolerably abundant in Sicily during migration. Schembri includes it in his catalogue of the birds of Malta; and Mr. C. A. Wright writes (*Ibis*, 1864, p. 65), "it first came under my notice as a visitor to Malta in 1859. I shot one in the spring of that year in St. Julian's Valley. Since then I have met with it annually in spring and autumn, although never in any great numbers. It arrives and departs about the same time as the other Wheatears."

Lord Lilford met with it on the Ionian Islands, where, he says (*Ibis*, 1860, p. 140), it "is the least common of the three species of Wheatear that I have observed in these parts. It arrives at the same time as the Russet Chat." Lindermayer also (*Vög. Griech.* p. 111) speaks of it as not quite as common in Greece as the Russet Chat, which it resembles in choice of habitat, and in its mode of nidification and habits, but arrives rather later than that species. Messrs. Elwes and Buckley state that Mr. Robson obtained it near Constantinople; and Professor von Nordmann says that it has occasionally been obtained in Southern Russia. Dr. Krüper has sent many specimens from the neighbourhood of Smyrna, where, he states, it is, as elsewhere, not so numerous as the Russet Chat. Canon Tristram records it from Palestine; and Hemprich and Ehrenberg met with it in Syria. It occurs in North-east Africa: according to Captain Shelley (*B. of Egypt*, p. 72), "it is not a resident in Egypt and Nubia, but arrives in March, and soon becomes abundant, usually frequenting the more cultivated portions of the country, where it may often be seen in the neighbourhood of villages perched upon some low bush or reed-fence." Hemprich and Ehrenberg met with it and obtained specimens at Ghenneh and Dongola; but it does not appear to have been recorded from Abyssinia.

In North-west Africa it is tolerably common. Mr. Tyrwhitt Drake records it (*Ibis*, 1867, p. 426) as "not rare during passage." The various travellers in Algeria refer to it as a winter visitant; and Mr. O. Salvin states (*Ibis*, 1859, p. 307) that in the Eastern Atlas "the favourite resort of this species is among the stony ground at the foot of the hills; and in such places it may be looked for and generally found. Roman ruins are also much frequented. We obtained two nests from the Madracen, where they were placed in the interstices of the stone of that building. Usually the nests were close by, or under, a large fragment of rock." Canon Tristram likewise writes (*Ibis*, 1859, p. 300) that "it occurs in the northern portion of the Hauts Plateaux, but is merely a winter visitant." I have also examined a specimen in the Berlin Museum, obtained by Delbrück in Senegal.

To the eastward it is found in Persia, where De Filippi shot it at Sardarak and Udjan; and Mr. Blanford likewise obtained it in Persia.

The most northern locality where it has been obtained appears to be Heligoland, where, according to Professor Blasius (*Ibis*, 1862, p. 70), a specimen was obtained by Mr. Gätke. In its habits the Black-eared Chat closely resembles the Russet Chat, with which species the earlier authors confounded it. It frequents the arid desert places or the edges of the desert, not being met with in the mountains, unless in the lower portions, or where they join the plains. Dr. Brehm (*J. f. O.* 1868, p. 69) speaks of it as being exceedingly shy, and as resembling *S. œnanthe* in its habits. Mr. Howard Saunders informs me that "its nest is a tolerably compact

and neat structure of dried grass-bents, lined with hair, and is often placed on the flat ground, just under the shelter of a small tuft of heather or grass, like a Lark's nest. The eggs, generally five in number, are sea-green in colour, spotted and zoned with russet. In a series I think they are rather more elongated in form, and somewhat more distinctly spotted, than those of *Saxicola rufa*; but of course they run into each other very much." Eggs in my own collection agree with Mr. Saunders's description, but are but very little spotted.

I have been compelled, in deference to the strict rules of priority, to use the specific name of *stapazina* for the present bird, there being no doubt that the bird described by Linnæus under that name is not the Russet Chat, but the present species. In the article on *Saxicola rufa* I have gone fully into this question, and may here refer to what I there say.

The specimens figured are, in the foreground to the right, an adult male in the russet plumage in which it arrives in Europe in the spring, and on the left the adult female in breeding-plumage, the male in breeding-plumage being in the distant background—these being also the specimens described, and in my collection. The specimens from which I have described the winter and immature plumage belong to the Calcutta Museum.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a, ♂. Heights near Haleh, Palestine, May 20th, 1864 (*H. B. T.*). *b*, ♂. Smyrna, April 17th, 1871 (*Dr. Krüper*).
c, ♂. Genoa, July 1868 (*H. Saunders*). *d*, ♀ *ad.* Smyrna, June 20th, 1871 (*Dr. Krüper*). *e*. Egypt (*Rogers*). *f*. Spain (*Irby*).

E Mus. Lord Walden.

a, ♂. Smyrna, April 4th, 1863 (*Dr. Krüper*).

E Mus. Ind. Calc.

a, *b*, ♂. Near Shiraz, September 1870. *c*, ♂. Shiraz (*Major St. John*).

E Mus. H. B. Tristram.

a, *b*, *c*, ♂. Mount Carmel, March 1864. *d*, ♂. Ainat, Lebanon, June 15th, 1864. *e*, ♂. Kulat el Sukif, May 28th, 1864. *f*, *juv.* Baalbec, June 14th, 1864. *g*, ♀. Near Jericho, April 22nd, 1864 (*H. B. T.*).
h, ♂. Lacba, May 9th, 1856. *i*, ♂. Berronaghma, May 28th, 1856 (*H. B. T.*).

E Mus. Howard Saunders.

a, ♂ *im.* Seville, March 27th. *b*, *c* ♂ *ad.* Malaga and Granada, April. *d*, ♂, *e*, ♀. Snared on nest, Malaga, May 15th, 1868. *f*, ♀. Snared on nest, June 3rd. *g*, ♂. Granada, June. *h*, *i*, ♂, ♀. Malaga, August 22nd. *j*, ♂. Malaga, September 3rd.

E Mus. Lord Lilford.

a, ♂. Seville, March 18th, 1872 (*Ruiz*).



RUSSET CHAT.

SAXICOLA RUFA

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SAXICOLA MELANOLEUCA.
♀

SAXICOLA RUFA
♀

SAXICOLA RUF A.

(RUSSET CHAT.)

Red or Russet-coloured Wheatear, Edw. Nat. Hist. p. 31, pl. 31 (1743), partim.*Ficedula vitiflora rufa*, Briss. Orn. iii. p. 459, no. 37 (1760), partim.*Sylvia stapazina*, Lath. Ind. Orn. ii. p. 530, no. 80 (1790, partim, nec Linn.).*Ænanthe stapazina* (L.), Vieill. Nouv. Dict. xxi. p. 428 (1818, nec Linn.).*Saxicola stapazina* (L.), Temm. Man. d'Orn. i. p. 239, "S. Europe" (1820, nec Linn.).*Vitiflora rufa*, C. L. Brehm, Vög. Deutschl. p. 406, "coasts of Mediterranean" (1831).*Vitiflora stapazina* (L.), C. L. Brehm, Vogelfang, p. 224, "Greece, N.E. Africa" (1850, nec Linn.).? *Vitiflora paradoxa*, C. L. Brehm, ut suprâ, "Egypt, S.E. Europe" (1850).*Saxicola stapazina* auctt., nec Linn.*Traquet stapazin*, *Cul-blanc roux*, *Motteux à gorge noire*, French; *Caiáda*, Portuguese; *Ruiblanca*, *Cagachin*, Spanish; *Dumnikan*, Maltese; *Monachella con la gola nera*, Italian; *Millil*, Arabic.*Figuræ notabiles.*Edwards, *l. c.*, male; Werner, Atlas, *Insectivores*, pls. 65, 66, 67; Susemihl, Vög. Eur. iv. taf. 2; Gould, B. of Eur. pl. 91; Naumann, Vög. Deutschl. taf. 90. figs. 1, 2; Fritsch, Vög. Eur. taf. 21. fig. 19.*♂ ad. æst.* albus: gulâ et capite laterali alisque nigris: rectricibus centralibus nigris, ad basin albis, reliquis albis ad apicem nigris et vix albido apicatis, rectrice externâ in pogonio externo dimidio apicali nigro; pileo griseo lavato: dorso et pectore vix rufescente lavatis; rostro et pedibus nigris: iride fuscâ.*♂ ad. ptil. autumn.* præcedenti similis, sed dorso, capite, pectore et collo conspicuè rufescentibus.*♀ ptil. autumn.* capite suprâ et dorso sordidè rufescentibus: alis nigris: primariis vix albido apicatis, secundariis tectricibusque alarum conspicuè rufescente marginatis et apicatis: uropygio et supracaudalibus albis: caudâ ut in mare adulto picturatâ: subtùs rufescenti-isabellina: gulâ et facie laterali nigris, plumis omnibus pallidè rufescente apicatis.*Adult Male in summer* (Gibraltar). Crown, back, rump, and upper tail-coverts, basal portion of tail, breast, and abdomen white, remainder of the plumage black; crown marked with grey; back and breast slightly washed with rufous cream-colour; the black on the throat does not extend nearly so far down as in *S. melanoleuca*; secondaries slightly tipped with dirty white; central rectrices black, except at the base, where they are white; remainder white, broadly terminated with black, this colour extending on the outermost along the outer web and obliquely across the inner web nearly to the centre of the feather; beak and legs black; iris brown. Total length $5\frac{1}{2}$ inches, culmen 0.68, wing 3.65, tail 2.6, tarsus 0.95.

Obs. An adult male from Algeria, evidently in early spring or winter plumage, has the head, back, and breast of a rich rufescent cream-colour, instead of white.

Adult Female in autumn (Egypt). Crown and back dull rufous, darker on the crown; wings blackish brown; primaries imperceptibly tipped with sandy brown; secondaries and upper wing-coverts broadly margined and tipped with rufous; rump and upper tail-coverts white; tail as in the adult male; upper part of the throat and sides of the head black, obscured by the feathers having rufous tips, lower part of the throat and underparts generally pale rufescent-buff, washed with rufous on the breast and flanks.

Young. Closely resembles the young of *S. melanoleuca*.

Obs. The changes of plumage which the present species undergoes are similar to those of *S. melanoleuca*; and I have therefore not described the female of this species in breeding-plumage, as it merely differs from that of *S. melanoleuca* in having less black on the throat; nor have I, for the same reason, described the female in autumn plumage of *S. melanoleuca*. The young of the two species are very similar, and are most difficult to separate.

Obs. The synonymy of the present species, of *S. melanoleuca*, and of *S. stapazina* is most difficult to unravel, and requires some explanation. Edwards, *l. c.*, figured under the name of the Russet-coloured Wheatear the present species as the male, and the Black-eared Chat as the female. Linnæus (*op. cit.*) in describing *Saxicola stapazina* clearly refers to the figure described by Edwards as the female, his description being as follows:—"M. ferruginea, area oculorum alis caudaque fuscis," thus the Black-eared Chat will stand as *S. stapazina*. Brisson (*op. cit.*) refers to Edwards's plate, and describes (no. 37) the present species as the male, and *S. stapazina* as the female; and in his plate and description of *Ficedula vitiflora rufescens* (no. 36) he clearly refers to the Black-eared Wheatear in autumn plumage. Vieillot first observed and pointed out (N. D. xxi. p. 424) that Edwards had figured two distinct species under one name as different sexes of the same bird (but did not observe that Linnæus in his description of *S. stapazina* referred to the figure on the plate of Edwards representing the Black-eared Chat); and he consequently retained the name of *S. stapazina* for the Russet Chat, and redescribed the Black-eared Chat under the name of *Ænanthe albicollis*. Temminck also made the same discovery as Vieillot, and with the same result, as he redescribed the Black-eared Chat (Man. d'Orn. i. p. 241) under the name of *Saxicola aurita*, by which name it has since been most commonly known.

THE Russet Chat, or Russet Wheatear as this present species has been usually termed, is found in Southern and South-western Europe and Northern Africa, being to the eastward replaced by a clearly distinguishable but closely allied species, which differs in having the black on the throat covering a much larger area, in some specimens very nearly joining the black on the wings and scapulars. In Portugal the present species is found during the summer season; and Dr. E. Rey informs me that it arrives at Algarve, in Southern Portugal, in the first week of April, and between the 6th and the 9th of that month numbers were observed on the coast, but they soon scattered inland and commenced nidification without further delay. Lord Lilford met with it commonly on the hills near Aranjuez, in Spain; and Mr. Howard Saunders writes to me that "it arrives in Southern Spain about the middle of March, and is very generally distributed throughout the country. It frequents rugged and partially cultivated ground, and ruins such as those of Italica, near Seville, where the old Roman amphitheatre always contains a couple of nests. I found one on a ledge in one of the vomitoria—a loose, untidy structure of bents and

dried grass, without any lining of hair, and containing five eggs. As a rule the eggs are rather rounder than those of the Black-eared Chat, and the bird has a lower range, and is more partial to ruins than its congener; indeed on the upper tablelands I do not recollect seeing it." Major Irby also met with it at Gibraltar, where it is rare, as he only records it as having once been observed, on the 4th of April. In the south of France it occurs, more especially in Provence, where, according to Baron J. W. von Müller (J. f. O. 1856, p. 225), it breeds, but during the spring migration is largely increased in numbers by arrivals from the south. Bailly records it as found only on two occasions in the extreme south of Savoy, it being an accidental visitant of extreme rarity. Savi states that it occurs near Genoa, whence I also possess a single specimen; and doubtless it is to be met with in Tuscany; near Modena it is, he states, rare. Salvadori never met with it in Sardinia, but writes (J. f. O. 1865, p. 35) that there are three specimens in the Museum, and that Cara includes it as a common resident, inhabiting the valleys and fields near the Saline in the winter, and the hills during the summer. In Sicily Professor Doderlein records it as appearing in April, and as nesting in small numbers in the elevated districts of the island; but the majority pass on to the continent, to reappear in the autumn migration, accompanied by the young. Mr. C. A. Wright (Ibis, 1864, p. 65) records it from Malta as being "comparatively scarce; but a regular annual visitor in spring and autumn. It arrives at the same time as *S. œnanthe*, or perhaps a little later. It sometimes perches on the branches of trees—a habit I have never observed in *S. œnanthe*." Lord Lilford (Ibis, 1860, p. 140) speaks of it as being more abundant in Epirus during the summer than *S. œnanthe*; Mr. W. H. Hudleston met with it in the delta of the Aspropotamo; and in Greece, according to Lindermayer (Vög. Griechenl. p. 110), it arrives early in April, and soon spreads over the barren hilly portions of the country, where it remains to breed, and leaves about the middle of September. Dr. Th. Krüper met with it during the breeding-season in the rugged mountains of Naxos, where it is not uncommon, and where he obtained its eggs. Dr. A. Fritsch (Vög. Eur. p. 194) says that it arrives in Bohemia in April and leaves early in September; he met with it commonly on the elevated plateaux of Montenegro, near the village of Niegusch. In Asia Minor and Southern Russia it is replaced by *Saxicola melanoleuca*; but in North-eastern Africa, though this latter species predominates, the present form is also met with during migration, though in very small numbers. I have specimens of both species obtained there. Captain Shelley (B. of Eg. p. 74) says that he only saw one specimen; but, on the other hand, Von Heuglin (Vög. N.O. Afr. p. 349) speaks of it as much commoner than *S. melanoleuca*. Judging from the series I have examined, I should be inclined to agree with Captain Shelley rather than with Von Heuglin, who, moreover, states that it goes further south than *S. melanoleuca*, having been met with by him in the Djur Gebiet. In North-western Africa the present species alone occurs. Mr. W. T. H. Chambers-Hodgetts (Ibis, 1867, p. 101) met with it in the ruins of the ancient Leptis (Lebdah), and at Turhona, where it was abundant; Mr. Salvin (Ibis, 1859, p. 307) observed it in the Eastern Atlas in situations similar to those frequented by the Black-eared Chat, and equally distributed over the same districts. Loche met with it in the province of Algeria to near Boghar, and states that it breeds near Milianah; and Mr. J. H. Gurney, jun., writes (Ibis, 1871, p. 80) that it is found in the Tell during the summer, and frequents the sea-shore at Algiers, not the dunes only, but also the rocks by the edge of the water. Mr. C. F. Tyrwhitt Drake also met

with it in Tangier and Eastern Morocco, where it is, he states (*Ibis*, 1867, p. 426), "not rare during passage." The most northerly limit of its range is Heligoland, where, according to Professor Blasius (*Ibis*, 1862, p. 70), it was obtained by Mr. Gätke; and it is even stated by Professor Schlegel (*Vog. v. Nederl.* p. 169) to have bred in Holland, which country is far above the latitude of its usual breeding-haunts.

In its habits the Russet Chat somewhat resembles the Common Wheatear; but it frequents desert and arid localities more than that species, and is frequently met with in rocky districts. Mr. J. H. Gurney met with it on the coast of Algeria, frequenting the rocks near the edge of the water, and says that it "goes from stone to stone with expanded tail, and when it has selected a perch remains motionless some time, though not always facing the intruder; it can perch with equal ease on a stalk or house-top, and even hover for a few seconds in the air." It is said to be particularly fond of perching on any small eminence, and to be exceedingly shy and difficult of approach. Its flight resembles that of our Common Wheatear (*S. ænanthe*), and, according to Loche, its song is varied and pleasant. It feeds on caterpillars and insects, which it seizes on the wing, or else picks up off the ground; and occasionally it eats berries.

I give above Mr. Howard Saunders's description of the nest of this species, to which I may add that, according to Lindermayer (*Vög. Griechenl.* p. 110), "its nest is simple, as of all the Chats; it is flat, constructed of dried bents, and lined with horse- or goat's hair; it is generally placed in a hole in an old building, or in the stone and clay walls. The eggs, from five to six in number, are pale sea-green, spotted sparingly with liver-brown dots, which are occasionally entirely absent." Eggs in my own collection agree with those of *Saxicola melanoleuca*, but are less richly marked, and not quite so bright. They are pale bluish green, sparingly marked with dull reddish, and in size are a trifle smaller than those of *S. ænanthe*.

On the one Plate I have figured two specimens from Spain; and on the second Plate the female in autumn plumage is figured with the female of *Saxicola melanoleuca* in breeding-plumage.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a, ♂ *ad.* Portugal, April 1869 (*Dr. E. Rey*). *b*, ♂. Malaga, Spain, April 22nd, 1869 (*H. Saunders*). *c*, ♀. Gibraltar (*Major Irby*). *d*, ♂, *e*, ♀. Egypt (*Rogers*).

E Mus. H. B. Tristram.

a, ♂ *ad.* Algiers (*H. B. T.*).

E Mus. Howard Saunders.

a, *b*, *c*, ♂. Granada, Valencia, Malaga, about April 20th. *d*, ♂. Ruins of Amphitheatre, Italica, near Seville, May 10th, from nest. *e*, *f*, ♂. Granada, May. *g*, ♀. Sierra Elvira, June. *h*, ♂. Granada, July. *i*, *j*, ♂. Malaga, August 22nd. *k*, ♂. Malaga, September 1st.



BLACK THROATED CHAT

SAXICOLA MELANOLEUCA.

(BLACK-THROATED CHAT.)

Muscicapa melanoleuca, Gld. Nov. Com. Petr. xix. p. 468, pl. 15. "Georgia" (1775).*Saxicola xanthomelæna*, Ehr. Symb. Phys. fol. aa, "Egypt, Arabia" (1829).*Saxicola eurymelæna*, Ehr. tom. cit. fol. bb, "Syria" (1829).*Saxicola albicilla*, V. Mll. Naumannia, 1851, iv. p. 28, "Abyssinia."*Saxicola hendersoni*, Hume, Ibis, 1871, p. 480.*Saxicola hendersoni*, Hume, 'Lahore to Yarkand,' p. 206, pl. xiii. (1873).*Saxicola talas*, Severtzoff, Turkest. Jevotn. p. 119, pl. viii. figs. 1, 3, 4 (1873).*Saxicola stapazina* auctt.*Figuræ notabiles.*Gld. *l. c.*; Hume, 'Lahore to Yarkand,' pl. xiii.; Severtzoff, *l. c.*

♂ *ad.* pileo, dorso, uropygio, supracaudalibus, pectore abdomineque albis immaculatis: facie laterali et collo usque ad pectus nigris: alis et caudâ ut in *Saxicola rufâ* picturatis.

Adult Male in summer (Smyrna, 23rd May). Crown, back, rump, upper tail-coverts, breast, and rest of the underparts, except the throat, pure white, the crown slightly marked with grey owing to the base of the feathers showing through; throat down to the lower part, sides of the head extending slightly above the eye, auriculars, wings, upper and under wing-coverts, and axillaries jet-black; the two central tail-feathers black, except at the base, where they are pure white, the other tail-feathers white, except at the tip, where they are broadly terminated with black, the outermost having the black extending back to the centre of the feather; legs and beak black; iris brown. Total length $5\frac{1}{2}$ inches, culmen 0·7, wing 3·5, tail 2·5, tarsus 1·0.

Adult Female in breeding-plumage (Smyrna, 13th May). Head, nape, and back dull hair-brown; rump and upper tail-coverts white; tail as in the adult male; wings blackish brown; throat dull blackish, obscured by dirty brownish grey; underparts otherwise white, slightly washed with dull ochre. This specimen appears to be an unusually old female.

Adult Female in autumn (Smyrna, 11th September). Agrees precisely with the autumn female of *S. rufa* described, except that the black on the throat extends much further down.

Young Male of the year (Smyrna, 23rd July). Crown and back dull dust-brown intermixed with pale rufous; the white base of the feathers showing through here and there; wings blackish brown, the primaries narrowly edged, and the secondaries and wing-coverts broadly margined with rufescent ochre; rump and upper tail-coverts white; tail white at the base, otherwise black; throat and sides of the face black, each feather tipped with pale rufous; breast and underparts generally dull rufous-buff, the breast washed with pale rufous; under wing-coverts and axillaries black, slightly tipped with dirty white.

Obs. In size I can find no appreciable difference between the present species and *Saxicola rufa*; for the

average of a dozen examples of each species scarcely differs at all. If any thing the Russet Chat appears on the average to have a somewhat longer wing than the Black-throated Chat; but as the series of the former average 3.53 against 3.50 of the latter, this difference is too trifling to take into calculation.

THIS, the eastern form of the Russet Chat, is found in South-eastern Europe and North-eastern Africa, ranging eastward into Persia and Yarkand, where, however, it appears to be rare. First described by Gldenstadt, from Georgia, it has since been by many naturalists united with its western ally *Saxicola rufa*, from which, however, it is fairly separable. It is not common in Russia; but Mr. L. Sabaneff informs me that he believes he saw it in the Rostoff district, in the Jaroslaf Government, and he thinks that it occurs in the Governments of Tula and Tamboff. Professor von Nordmann met with it in Southern Russia, and states that a few breed on the southern coast of the Crimea, nesting in the cliffs; and Dr. Gustav Radde (J. f. O. 1854, p. 57) writes that he killed one at a village near Simferopol in the month of May, and later in the same month he found them breeding on the banks of the Dnieper, their nests being placed in inaccessible clefts between the hard clay and stones. Mntries (Cat. Ras. p. 30) "only observed it on the arid plains of the Caspian, near Bakou, where it was continually met with running about, being generally seen singly or in pairs. I found its nest in June, placed in a cleft of a rock; it was tolerably large, and contained four eggs, pale green in colour, spotted with reddish."

In Asia Minor it is common; and I have received numerous specimens from Dr. Krper, obtained by him near Smyrna, where, he writes, it arrives late in March or early in April. Those which arrive first remain about a fortnight, and then move onwards; but those which are observed after about the middle of April remain there to breed, and are found frequenting the same localities as the Black-eared Chat, but are not so numerous as that bird. Canon Tristram met with it in Palestine, and states (Ibis, 1867, p. 96) that he obtained a specimen at Shiloh in December; and Mr. W. J. Chambers obtained specimens at El Arish, in Southern Palestine. It is found in North-eastern Africa, during the winter in the more southern parts, and on migration in Egypt. Dr. von Heuglin (Ibis, 1859, p. 341) records it as found in the Danakil country, between the peninsula of Buri and the Gulf of Tadjura, Somali coast, Southern Arabia, in October and November; and he also observed it (J. f. O. 1869, p. 164) in the northern parts of Egypt, Nubia, and Abyssinia, in the latter country not going high up into the mountains. He speaks of it as rare; and he is unable to say if it is resident in North-east Africa.

To the eastward it is recorded by De Filippi as occurring near Tiflis. Mr. Blanford obtained it in Persia; and Dr. Henderson procured it on the Yarkand Expedition, "at the Arpalak river, near Sanju, and at Koshtak, twenty miles further north. They were found in fields, little patches of cultivation on the borders of the desert, and were associated with *Saxicola deserti*."

In its habits the Black-throated Chat closely resembles the Russet Chat, frequenting in Eastern Europe the same localities as that species does in the west. It affects the open country, and especially rocky places or clay soil, and is often met with on hills, but seldom, if ever, at great altitudes in the mountain-ranges.

It constructs its nest of grass-bents and fine rootlets, a few hairs being occasionally used in the inside, and makes a tolerably large nest, which is usually placed in the cleft of a rock,

often in a carefully selected, almost inaccessible, place. From four to five eggs are usually the number deposited, and these, judging from four which I have obtained from Smyrna through Dr. Th. Krüper, closely resemble the eggs of *Saxicola rufa*, but are somewhat brighter in colour, and more richly marked.

Its song is similar to that of the Russet Chat, and is by some naturalists compared to that of the common Wheatear, though more feeble and shorter.

Its food consists of insects; and during the winter season it probably also to some extent may feed on seeds. Dr. Radde says that those he observed were searching for food in the rotten mould of old fallen willow trees.

The specimens figured are:—on the one Plate an adult male in full breeding-plumage in the foreground; in the background, to the right, a young male, to the left a moderately aged female; and on the second Plate, together with an autumn-plumaged female of *Saxicola rufa*, a very old female in full breeding-plumage,—all these specimens being from Smyrna, and in my own collection.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a, ♂ *ad.* Malta (*C. A. Wright*). *b*, ♂. Ghizeh, Egypt, April 3rd, 1863. *c*, ♂. Nile delta (*S. Stafford Allen*). *e*, *f*. Egypt (*Rogers*). *g*, *h*, ♂. Smyrna, May (*Dr. Krüper*). *i*, *j*, ♂ *juv.* Smyrna, July 1871. *k*, ♂ *juv.* Smyrna, August 1871. *l*, ♀ *ad.* Smyrna, May 13th, 1871 (*Dr. Krüper*). *m*. Kulat-el-Sukif, Palestine (*H. B. Tristram*).

E Mus. H. B. Tristram.

a, *b*, *c*, ♂. Palestine, March. *d*, *e*, ♂. Palestine, April. *f*, *g*, ♂. Palestine, May 1864. *h*, *i*, *j*, ♂. Palestine, March and April 1864. *k*, *juv.* Safed, May 19th, 1864 (*H. B. T.*).

E Mus. Lord Walden.

a, ♂. Smyrna, May 9th, 1871 (*Dr. Krüper*). *b*, *juv.* Smyrna, October 9th, 1863. *c*, ♀. May 8th, 1863. *d*, ♀. November 9th, 1863. *e*, ♂. May 16th, 1863, Smyrna (*Schrader*). *f*, ♂, Abyssinia, November 8th, 1868 (*Jesse*).

E Mus. Ind. Calc.

a, ♂. Shiraz, June 1869 (*St. John*).



DESERT CHAT
SAXICOLA DESERTI

SAXICOLA DESERTI.

(DESERT-CHAT.)

- Saxicola stapazina*, Licht. in Eversm. Reise nach Buchara. p. 128, no. 12 (1823, nec Linn.).
Saxicola deserti, Rüpp. in Temm. Pl. Col. p. —, pl. 359. fig. 2 (1825).
Saxicola isabellina, Temm. tom. cit. pl. 472. fig. 1 (1829).
Saxicola pallida, Rüpp. Neue Wirbelth. p. 80 (1835–40).
Saxicola atrogularis, Blyth, Journ. As. Soc. Beng. xvi. p. 130 (1847).
Saxicola salina, Eversm. Bull. Soc. Mosc. xxiii. pt. ii. p. 567, pl. 8. fig. 2 (1850).
Saxicola atrigularis, Bp. Consp. Gen. Av. i. p. 304 (1850).
Saxicola gutturalis, Licht. Nomencl. Av. p. 35 (1854).
Saxicola homochroa, Tristr. Ibis, 1859, p. 59.
Saxicola montana, Gould, B. of Asia, pt. xvii. (1865).
Saxicola albomarginata, Salvad. Att. Soc. Tor. 1870, p. 507.

Figuræ notabiles.

Rüpp. *l. c.*; Eversmann, *l. c.*; Gould, B. of Asia, part xvii. (*ptil. æst. et autumn.*).

♂ *ad.* suprâ ochrascenti-isabellinus, pileo vix cinereo lavato: margine frontali et striâ superciliari ad nucham albidis: uropygio, supracaudalibus, abdomine et subcaudalibus albis: caudâ nigrâ, basi obtectâ purè albâ: remigibus nigricantibus, primariis vix albido apicatis: secundariis intimis latiùs dilutè fulvo marginatis: tectricibus alarum minoribus nigris, albido apicatis, majoribus isabellinis, ad basin nigris: loris, ciliis, gutture, collo laterali et regione paroticâ nigerrimis, pectore et hypochondriis vix isabellino adumbratis: rostro et pedibus nigris: iride fuscâ.

♀ *ad.* suprâ cinerascenti-isabellina: subtùs pallidè ochrascenti-isabellina, gutture cinereo lavato, et abdomine albido vix isabellino lavato: caudâ et alis ut in mari, sed sordidioribus, his sordidè brunnescentibus.

Adult Male in breeding-plumage (Algerian Sahara). Crown, nape, and back sandy isabelline, on the crown tinged with grey, and fading into white towards the rump, which, with the upper tail-coverts, is pure white; quills black, narrowly margined with whitish; inner secondaries brownish black, broadly margined with sandy isabelline; scapulars and larger wing-coverts pale isabelline, the former tinged with grey, and the latter black at the base, and washed with pale rufous isabelline; median and lesser coverts black, narrowly tipped with white; tail black, white at the base; sides of the head and neck, and entire throat to the breast glossy black; forehead and a superciliary line dull white; breast and abdomen white, on the breast and flanks washed with pale rufous isabelline; under wing-coverts white; axillaries black, tipped with white. Total length 5.25 inches, culmen 0.75, wing 3.5, tail 2.6, tarsus 1.1.

Adult Male in winter (Egypt). Differs from the specimen last described in being rather greyer on the back, the black on the throat being somewhat obscured by the creamy white margins which all the feathers have; and the light margins and tips on the wing-feathers are much more fully developed.

Adult Female (Etawah, N.W. India, 19th January). The upper parts are duller and greyer than in the male; the white frontal line and supercilium are scarcely visible; the rump and upper tail-coverts are washed with rufous isabelline; and the black throat is absent, the entire underparts being sandy isabelline, rather greyer on the neck; wings dull dark brown; the secondaries and wing-coverts margined with pale sandy isabelline; scapulars like the back; axillaries pale sandy isabelline; tail as in the male. Total length 5.25 inches, culmen 0.7, wing 3.5, tail 2.55, tarsus 1.0.

Young (150 miles E. of Shiraz, May). Can only be distinguished from the young of *Saxicola stapazina* by the larger amount of dark brown on the tail, which is a constant characteristic of the present species.

Obs. It is astonishing how few females are obtained of this as well as many other species in proportion to the number of males. Mr. J. H. Gurney, jun., in referring to this fact, estimates that, according to his experience in Algeria, the proportion is as one to eight. I think it not improbable that the female may after a time assume a plumage resembling that of the young male. I have figured a specimen of a very old female of *Saxicola melanoleuca*, which, had it not been carefully sexed by Dr. Krüper, I should have considered to be a young male.

THE Desert-Chat, as its name implies, is an inhabitant of the sterile sandy and desert country, and is found in Northern and North-eastern Africa, extending eastward through Persia into the north-western parts of India. So far as I can ascertain, it has never occurred in those parts of Europe proper whose shores are washed by the Mediterranean, being restricted to the countries which are to the south of that sea. In Algeria, Canon Tristram writes (*Ibis*, 1859, p. 300), "like *Saxicola lugens*, it is restricted to the south of the Sahara, but resorts to the level shrubless salt-plains, hopping along the sand, and when alarmed continuing its flight to a considerable distance. It was obtained in the dreary desert between Guenara and Hadjira, and also in the Chotts near Tuggurt. It breeds in burrows." Mr. Taczanowski, who met with it in Algeria, states that it inhabits the southern portions of the Atlas range, where he heard its song throughout the whole winter; and Mr. J. H. Gurney, jun., records it (*Ibis*, 1871, p. 80) as "abundant from Bougzoul to Gardaia, adapting itself to the food found in the Mزاب and the Hauts Plateaux. All across the Algerian Sahara it was seen repeatedly, giving utterance to its lively song, which can be heard at a great distance (though not further than the notes of its congeners). Its flight is moderately swift, but not direct. Its tail is never still a moment; and, as in the other Wheatears, the jerking action is always accompanied by a slight vibrating motion of the wings." Major Loche and other writers on the ornithology of Algeria give similar information respecting the range of this species as is given by Canon Tristram and Mr. Gurney. In North-eastern Africa it is common in Egypt, Nubia, and Abyssinia; and is stated by Von Heuglin to occur along the coasts and on the islands of the Red Sea and the Gulf of Aden. Captain Shelley (*B. of Eg.* p. 47) refers to it as being "abundant in Egypt and Nubia, where it remains throughout the year, and may usually be met with along the embankments or on the confines of the desert." Mr. Blanford, who met with it in Abyssinia, writes (*Geol. & Zool. of Abyss.* p. 362) that it was "only seen close to the coast, and was abundant in December and January about Annesley Bay, but it became scarce and ceased to migrate in February. There were none in May, June, July, or August near Annesley Bay and Massowa. This species can scarcely be a permanent resident, on the coast at least, as Von Heuglin appears to think probable." It was met with at Kordofan by Consul Petherick, as also by Von Heuglin. Passing

northward, again, I find it recorded from the peninsula of Sinai by Mr. C. W. Wyatt, who writes (*Ibis*, 1870, p. 13) that he shot a pair near Tor. Canon Tristram (*P. Z. S.* 1864, p. 442) obtained a couple of specimens at the north end of the Dead Sea in the month of January, and also states (*Ibis*, 1867, p. 95) that it frequents the shores of that sea, north and south. I do not find any record of its occurrence in Asia Minor; but Messrs. Dickson & Ross, De Filippi, Blanford, and St. John obtained it in Persia; and Eversmann records it (*J. f. O.* 1853, p. 287) from the eastern shores of the Caspian, where, he states, it inhabits the clay soil and stony hills, or the low mountain-ranges of the southern Kirghis steppes, eastward of the Caspian, to the Soongarei, and especially affects the salty clay soil. Dr. Henderson found it common in Ladāk, almost to the Pangong lake, and again in the Lower Karakash valley and the plains of Yarkand; and Mr. Blanford writes to me, "I found it common on the shores of the Persian Gulf and in Baluchistan in winter, and equally abundant in spring and summer on the highlands of Southern Persia, where it breeds. In Northern Persia I did not notice it. I found a nest on May 31st in a small hollow by the side of a bush. The spot was on an extensive plain, covered with scattered bushes, on the road from Kurman to Shiraz, at an elevation of between 5000 and 6000 feet above the sea. The nest contained two young birds, just hatched, and one egg of a pale greenish blue colour." Mr. A. O. Hume "found it common to a degree throughout Sindh, as it is everywhere in the cold season throughout the North-western Provinces, the Punjaub, and Rajpootana. The bleaker and more inhospitable the wastes that stretched away, the more at home, true to his name, seemed the Desert-Wheatear. It was not, however, only in Sindh that this bird occurred; we equally met with it at Rusnu and other places along the Mekran coast, and I have no doubt that, in suitable localities, its range extends unbroken from Cawnpore to Cairo."

Dr. Jerdon (*B. of Ind.* ii. p. 133) gives its range in India as "tolerably common in the Upper Provinces, in Sindh, the Punjab, and Afghanistan;" and Mr. A. von Pelzeln, in his paper on birds from Thibet and the Himalayas (*Ibis*, 1868, p. 308), refers to it as found at Kotgurh (only in winter), Lake Gyagar, in Rupshu, and Ankhang. The most eastern locality whence I find it recorded appears to be Nagpoor, where Mr. Blanford (*Ibis*, 1867, p. 463) obtained three specimens.

In its habits the present species does not appreciably differ from its allies *S. rufa*, *S. melanoleuca*, and *S. ænanthe*, but is essentially a frequenter of solitary desert places. Von Heuglin met with it in North-eastern Africa in pairs, frequenting the sand-plains and dunes, and found both in the steppes and on the fallows, being but seldom met with amongst the rocks; after the rainy season they collect in small flocks and wander about the country, often in company with other Chats and Larks. Captain Beavan, who obtained numbers near Umballah, in India, says (*Ibis*, 1867, p. 451) that "when disturbed it frequently sits on low acacia bushes; and one I had followed up took refuge in a peepul tree, on the lower bough of which I shot it. It readily takes to holes in the ground when wounded." Its song is said to be pleasant, and is uttered not only during the breeding-season but also during the winter. It feeds, like the other Chats, on small insects, which it usually picks up off the ground; and it is said by Messrs. Dickson and Ross to eat ants.

Its nest is said to resemble that of the Black-throated Chat, and is placed on the ground, or else in a fissure, or under the shelter of a small bush. I have one single egg, obtained by Major

Loche in Algeria, which resembles those of the Black-throated Chat, but is slightly duller in colour, and has larger pale liver-coloured spots collected round the larger end. Dr. E. Rey informs me that he possesses two eggs collected in Algeria, which he compares to those of the Russet Chat, but says that they are not so brightly coloured or so much spotted with rufous.

Mr. Blanford, when at Frankfort in September last, examined Rüppell's types in the Senckenberg Museum, and convinced himself that the so-called male of *Saxicola pallida*, Rüpp., is the female of *S. monacha*, the specimens described as the female and young of that species being females of *Saxicola deserti*. Rüppell himself (Neue Wirbelthiere, p. 80) refers to his figure of *Saxicola pallida* in the 'Atlas,' pl. 34. fig. *a*, as an immature bird, and states that the adult bird was figured by Temminck (Pl. Col. 472. fig. 1) under the name of *Saxicola isabellina*, and says that it has the auricular region darker, and the terminal two thirds of the tail dark brown—which clearly proves that he is speaking of the Desert-Chat; and I have also, from an examination of the plate, found this to be the case, the specimen figured being a pale female of *S. deserti*. Mr. Blanford and I have also examined the types of *Saxicola gutturalis*, *S. albomarginata*, and *S. homochroa*, and convinced ourselves that they are all three referable to the present species.

The specimens figured are an adult male in breeding-plumage and a male in winter plumage in the foreground, the adult female being in the background; these are the specimens described, and are in my collection.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a, b. Algerian Sahara. *c*, ♂. Tuggurt, Algeria. *d*. Egypt (*J. Verreaux*). *e*. Egypt (*E. Cavendish Taylor*). *f*. Lahore (*Marshall*). *g*, ♂. Etawah, N.W. India, November 16th (*W. E. Brooks*). *h*. Etawah, January 19th. *i*, ♀. Etawah, February 11th (*W. E. Brooks*).

E Mus. Lord Walden.

a. N.W. India. *b, c, d*. Umballah (*Beavan*). *e, f*. Umballah, December and January (*Dr. Scott*). *g, h*, ♂, *i*, ♀, *j*, ♂. Umballah, November and January (*Beavan*). *k, l*, ♂. Umballah, November (*Beavan*).

E Mus. H. B. Tristram.

a, ♀ (marked as ♂). Desert of Souf, January 1st, 1857 (type of *S. homochroa*). *b*, ♂. North end of Dead Sea, January 13th, 1864 (*H. B. T.*). *c*, ♂. Cashmere (*Dr. Jerdon*). *d*, ♂, *e*, ♂. Etawah, N.W. India, November and December (*W. E. Brooks*). *f, g*, ♂. Burtina, N.W. India (*Brooks*).

E Mus. Ind. Calc.

a, ♀. 150 miles east of Shiraz, Persia, May 1872. *b*. Shiraz, September. *c*, ♀. Shiraz, September 1870. *d*, ♀. Persian Baluchistan, February 1872. *e*. Gishtegan, Persian Baluchistan, February 29th, 1872. *f*, ♂, *g*, ♀, *h*, ♂. Gwader, Baluchistan, January. *i*, ♂. Between Dozzal and Banpoor, Baluchistan, 4200 feet elevation, March. *k*, ♂. Dasht river, Baluchistan. *l*. Gwader, Baluchistan. *m*, ♂. Pasni, Mekran coast, Baluchistan, November 1871 (*W. T. Blanford*).

E Mus. Tor.

a, ♂. Tunisian Sahara, May 1866, type of *S. albomarginata* (*Antinori*).



ARABIAN CHAT.
SAXICOLA ERYTHRAEA



SAXICOLA ERYTHRÆA,
IMMATURE.

SAXICOLA ERYTHRÆA.

(ARABIAN CHAT.)

Saxicola erythræa, Ehr. Symb. Phys. fol. *c c* (1829).*Saxicola halophila*, Trist. Ibis, 1859, p. 59.*Saxicola libanotica*, Trist. Ibis, 1867, pp. 91–94, nec Ehr.*Saxicola finschii*, Heugl. Orn. N.O.-Afr. p. 350, no 299 (1869).*Saxicola lugens*, Licht. nom. MS. Mus. Berol.*Figura nulla.*

♂ *ad. æst.* pileo, nuchâ, dorso, uropygio et supracaudalibus, pectore et corpore subtùs purè albis : capitis lateribus, gulâ et gutture usque ad pectus, hypochondriis, scapularibus et tectricibus alarum nigerrimis : remigibus brunnescenti-nigris, secundariis vix albido apicatis : rectricibus centralibus dimidio basali albis, aliter nigris, reliquis albis conspicuè nigro terminatis et vix albido apicatis : rostro et pedibus nigris : iride fuscâ.

♀ *ad.* pileo, dorso et scapularibus fulvescenti-griseis : uropygio et supracaudalibus albis : caudâ ut in mare sed paullo sordidiore : remigibus et tectricibus alarum fulvescenti-nigris fulvido marginatis, his saturationibus : superciliis grisescenti-albidis : gulâ et gutture cum capitis lateribus nigricantibus, plumis omnibus pallidè brunneo apicatis : corpore subtùs albido.

♂ *juv.* pileo, nuchâ, dorso cum scapularibus albis isabellino adumbratis : alis et caudâ ut in feminâ picturatis : gulâ, gutture et capitis lateribus nigris : corpore subtùs albo.

♀ *juv.* feminæ adultæ similis sed pallidior : gulâ, gutture et capitis lateribus sordidè albidis.

Adult Male (Bethel, 22nd February). Crown, nape, dorsal region, rump, and upper tail-coverts, breast (except the upper part), abdomen, and under-tail coverts pure white; sides of the head and neck, entire throat down to the upper part of the breast, wings, scapulars, and wing-coverts black; quills not so dark as the rest of the wing, being more brownish black than jet-black, as are the other black portions of the plumage; secondaries slightly tipped with dull white; central tail-feathers pure white on the basal half and jet-black on the terminal portion: other rectrices white, broadly terminated with black, and finally very narrowly tipped with dirty white; bill and legs black; iris dark brown. Total length $5\frac{1}{4}$ inches, culmen 0·7, wing 3·4, tail 2·35, tarsus 1·05.

Adult Female (Judæa, 6th February). Crown, back, and scapulars dull brownish grey or dust-colour; rump and upper tail-coverts white; quills blackish brown, narrowly margined with dull fulvous; wing-coverts similar, but blacker; tail as in the adult male, but rather duller in colour; superciliary region lighter than the rest of the head; throat, sides of the neck, and auriculars black, considerably obscured by light dusty brown and dirty white, the feathers being tipped with those colours; feathers on the centre of the throat more broadly tipped than the rest, giving that portion the appearance of being almost uniform dirty white; rest of the underparts white; under wing-coverts jet-black; legs and bill black; iris brown.

Young Male (Constantine, Algeria). Crown, nape, back, and scapulars white, obscured by dull dusty isabelline; wings as in the adult female; tail, throat, and underparts generally as in the adult male.

Young Female (Till Hhora, 5th February). Similar to the adult female, except that the upper parts are paler in colour; and the throat has not attained the blackish colour.

Obs. At the first glance the adult male of the present species bears considerable resemblance to *Saxicola melanoleuca*; but the black on the throat extends much further down and joins that colour on the wings, being also extended to the upper portion of the flanks. On examining a series, however, the two species are very distinct. *S. melanoleuca*, like the Russet Chat, appears always to have some trace of yellowish rufous coloration, and in the immature plumage, as also in the autumn and spring, this tinge is very apparent; but, on the other hand, the present species never appears to have that colour in the plumage; but only dull dust-grey (very seldom, indeed, with the remotest tinge of yellowish) is the colour that pervades the plumage of the female immature bird, and possibly the adult bird in the winter. Usually the prevailing colour in the adult female and immature bird is dust-grey; but in one immature specimen, Canon Tristram's type of *S. halophila*, the crown and back are faintly washed with yellowish isabelline.

SCARCELY any of the Chats is so little known as the present species; and all the information I have managed to collect respecting it is comparatively meagre. First described by Ehrenberg from specimens obtained by Hemprich and himself in Arabia, it appears to have been lost sight of until Canon Tristram met with it in Palestine, where he obtained a splendid series of specimens in all stages of plumage, which he has kindly placed at my disposal. It has hitherto been met with only in Palestine, Syria, Arabia, Egypt (where, according to Von Heuglin, Orn. N.O.-Afr. p. 350, Zelebor obtained it in the desert of Saqárah), Persia, and Algeria, from which latter country there are two specimens in the Berlin Museum, which Mr. Blanford and myself carefully compared with Canon Tristram's examples, which latter we took to Berlin for that purpose. Ehrenberg gives no particulars as to its habitat or its habits as observed by him in Arabia, where he appears to have only obtained two specimens.

To the eastward the Arabian Chat has been met with in Persia, whence Mr. W. T. Blanford and Major St. John brought back four specimens, which agree precisely with those obtained by Canon Tristram in Palestine. The specimen in the Bremen Museum, a splendid male bird in full breeding-plumage, the type of *Saxicola finschii*, is labelled as having been obtained in Central Asia; but Dr. Otto Finsch informs me that it was procured through a dealer, and that there is some doubt as to whether the locality indicated is correct. Mr. Blanford writes to me:—"I obtained but one specimen of this species during my journey in Persia; this was a male, in full breeding-plumage, shot at Khan-i-surk, south-west of Kurman, on the 22nd of May, at an elevation of 8000 feet above the sea. Three other specimens were procured previously by Major St. John at Shiraz in June. The bird appears to be rare in Southern Persia, and has not hitherto, so far as I am aware, been found further to the eastward. I did not meet with a single specimen in Baluchistan. It probably breeds in small numbers on the southern portion of the Persian highlands."

Being unable to find any published information respecting the habits of the present species, I wrote to make inquiries of Canon Tristram, who sends me the following notes:—"This species

is the only Chat found in Palestine in the winter season. It is very fond of making short flights for a mile or two at a time in front of the traveller, whom it reconnoitres at every pass, but always well out of gunshot range. Like the Wheatear it slips down over the top of a boulder or rock and rests for a time out of sight beneath its shelter, and then flits on, clearly showing its straight white back, drops then on to another boulder, and jauntily jerks its tail until you approach it. In winter it is a solitary bird, and but seldom goes in pairs. It is an early breeder, and builds in chinks of rocks a very flat and untidy nest of fine grass-straws, a few feathers being also introduced in the lining. The eggs are pale bluish white, rather round, and smaller than those of *Saxicola leucopyga*, but of the same general character, with sparsely scattered blotches and spots. When fresh and unblown they have a lovely warm pink hue, and are very fragile. During the breeding-season the birds are of course seen in pairs; and the male seems more than usually attentive to his domestic duties; in fact, I suspect he has often to keep the house. It does not migrate, though one would imagine it scarcer in summer than in winter; but this is owing to the fact of the great numbers of its congeners which arrive in the spring, and outnumber it where during the winter it has held undisputed sway for months. It is worthy of note that the Common Wheatear is a summer visitant where this species is a constant resident in all parts of Palestine, except the Jordon Ghor, where I never found it, as it is a true hill-bird."

I have three eggs of this Chat in my collection, all taken between Jerusalem and Jericho by Mr. J. H. Cochrane in the month of April, two on the 17th, and one on the 24th. One of these was unfortunately badly damaged by the post-office authorities, who managed to flatten a thick tin box in which it and another were transmitted to Dr. Tristram for examination. This gentleman informs me that they agree precisely with his specimens, except that one is slightly faded; and I will therefore not recapitulate his description. In size they are, if any thing, a trifle larger than the usual run of eggs of our Common Wheatear (*Saxicola œnanthe*), and rather rounder.

The specimens figured are, on the one Plate, the adult male on the left, the young male to the right, and the adult female in the background, and on the other Plate the immature male and female, these being the specimens described above, the localities being there given. The two last are the types of *Saxicola halophila*, Tristram.

In the preparation of the above article I have examined the following specimens:—

E Mus. Ind. Calc.

a, ♂. Shiraz. *b*, ♂. Shiraz, June 1869. *c*, ♂. Shiraz, June 13th, 1869 (*St. John*). *d*, ♂. S.W. of Kerman, S. Persia (*W. T. Blanford*).

E Mus. H. B. Tristram.

a, ♂ *juv.*, *b*, ♀ *juv.* Omnache, Algeria, January 19th, 1857 (types of *S. halophila*) (*H. B. T.*). *c*, ♂. Tyre, December 5th, 1863. *d*, ♂. Bethel, February 22nd, 1864. *e*, ♂. Beersheba, February 3rd, 1864. *f*, ♂. Shiloh, December 21st, 1862. *g*, ♂. Magdala, April 2nd, 1864. *h*, ♀. Wilderness of Judea, February 6th, 1864. *i*, ♀. Near Beersheba, February 2nd, 1864. *j*, ♀. Jericho, January 12th, 1864. *k*, ♀. Till-Hhora, February 5th, 1864 (*H. B. T.*).

E Mus. Brem.

a, ♂ *ad. æst.* Central Asia? (type of *Saxicola finschii*).

E Mus. Berol.

a. Arabia (*Hemp. and Ehrenb.*, type of *Sax. erythræa*). *b*, ♂ *ad.*, *c*, ♀. Constantine, Algeria, November (*Buvry*).



TRISTRAM'S CHAT
SAXICOLA PHILOTHAMNA.

SAXICOLA PHILOTHAMNA.

(TRISTRAM'S CHAT.)

Saxicola philothamna, Tristram, Ibis, vol. i. p. 58 (1859).*Dromolæa chrysopygia*?, De Fil. Archiv. per la Zool. vol. ii. p. 301 (1862).*Figura unica.*

Tristram, Ibis, 1857, pl. 9.

♂ *æstiv.* pileo albo, vertice vix arenario, dorso brunnescenti-nigro: dorso imo, uropygio et supracaudalibus fulvescenti-albis, his imis vix rufescentibus: tectricibus alarum brunnescenti-nigris, minimis albido, majoribus fulvescenti-albo limbatis: remigibus pallidè brunneis, extùs fulvescente albo limbatis: rectricibus brunneis, ad basin rufis: loris, facie et collo lateralibus gulâque totâ nigris: corpore reliquo subtùs lactescenti-albo, subcaudalibus fulvescentibus: subalaribus et axillaribus nigris, exterioribus fulvescenti-albis: rostro et pedibus nigricantibus: iride brunneâ.

♂ *hiem.* similis ptilosæ æstivæ sed obscurior, plumis fulvido latiùs marginatis: dorso cinereo lavato, uropygio et supracaudalibus lætè cervinis: subtùs fulvescenti-albus, gulæ et faciei lateralis nigredine albido marginatâ.

♀ omninò diversa: suprâ lætè arenario-cinnamomea, dorso superiore et scapularibus cinerascentibus: uropygio pallidè fulvescenti-cinnamomeo: tectricibus alarum brunneis, minimis et medianis fulvo, majoribus rufescente limbatis: remigibus brunneis extùs latè fulvescente limbatis: caudâ ut in mari coloratâ: subtùs sordidè fulvescens, pectore et subcaudalibus cinnamomeo lavatis.

Adult Male, summer (Algeria). Top of the head and nape white, on the crown washed with dirty grey; back black, towards the rump shaded off with grey; rump and upper tail-coverts white, shaded with pale rufous; basal half of the tail bright rufous, the remainder dark blackish brown; quills dull brown, washed with lighter brown on the outer web; secondaries slightly tipped with dirty white; wing-coverts darker brown than the quills, edged and tipped with dirty white; lores, throat, sides of the head and neck jet-black, this colour being extended to the sides of the breast; rest of the underparts white; under tail-coverts washed with pale rufous; under wing-coverts black, broadly margined with white; beak and legs blackish brown; iris brown. Total length 7·0 inches, culmen 0·8, wing 3·8, tail 2·9, tarsus 1·2.

Adult Male, winter (Aïn el Ibel, November 8th, 1856. Canon Tristram's type specimen). Upper part of the head and nape dull brownish grey instead of white, as in the summer plumage; a distinct white superciliary line over the eye to the nape; back much duller in colour, and washed with grey; rump and upper tail-coverts buffy white, washed with rufous; secondary quills and wing-coverts with broad whitish margins, the former washed with rufous; underparts as in the summer plumage.

Obs. Another male, also in Canon Tristram's collection, shot nearly a month later than the above, has the head and rump much lighter and back darker, and is about intermediate between that bird and Loche's

specimen; a third example, shot by Canon Tristram at Beersheba, on the 2nd of February, 1864, is in the full summer-plumage similar to that above described.

Adult Female (El Aghouat, November 20th, 1856. Canon Tristram's type specimen). Upper parts sandy isabelline, on the head and rump washed with rufous, and darker on the back; quills dark brown, margined with dull isabelline; the larger wing-coverts broadly margined with rufous isabelline; tail blackish brown, the basal half bright rufous; upper tail-coverts pale rufous; underparts buffy white, on the breast washed with pale rufous; auriculars washed with rufous; under tail-coverts dull rufous buff.

Obs. A female, shot at Beersheba on the 2nd of February, is similar to the above, but has the underparts rather paler.

ONE of the least-known of the Chats, this species, first described by Canon Tristram, has a very restricted range, and has hitherto only been met with in North-western Africa, Palestine, and Persia, not having as yet been recorded from any portion of the large intervening tract of country. Mr. J. H. Gurney, jun., met with it in Algeria, and writes that "many pairs were seen at Tibrem, but never in the stony Chabka myat. This is a large bird, holds itself upright, and has the habit of raising the tail, common to the rest of the tribe. I did not see them near a dyat, but in the level prairie-land, where flocks and herds pasture. From being unmolested they have learnt to hop among the Arab tents, feeding upon what they find among the small stones," &c. Mr. Taczanowski records it as rare in Algeria, and writes that "the first (a male) was shot by Count Alexander Branicki, on the road between Batna and Elkantara; and the female slipped into a jerboa's hole, and escaped. In the desert they were always met with in pairs." To Canon Tristram, however, we are indebted for the chief information respecting this species. In his paper on the ornithology of Northern Africa (*Ibis*, 1859, p. 299) he writes as follows:—"I first met with it near the caravansery of Aïn el Ibel, a day's journey north of El Aghouat; and thenceforward until our approach, in the following spring, to the Tunisian frontier it occurred sparingly at intervals, wherever the nature of the country afforded scope for its peculiar habits. I found it near the dayats of El Aghouat, near Waregla, and far to the north-east of El Mari'er, south-east of Biskra. It is a constant resident and a very early breeder in those portions of the Desert which are composed of loose sand studded with low stunted bushes. Among rocks or in the Salt-districts I never detected it. It perches, like the Whinchat, on the top of a bush, uttering incessantly a very similar note. The male and female are constantly together, and on being alarmed take refuge sometimes in flight, but more generally disappear into a burrow in the sand. The first I shot vanished in a moment; and though certain he had fallen, I was compelled to relinquish my search. The second disappeared as mysteriously; but observing a drop of blood at what seemed to be a small lizard's hole, I dug down, and, after a quarter of an hour's excavation, recovered the bird, quite dead. At this moment the female issued from another hole close by, and escaped. On further search, I found a small chamber with last year's nest, and another passage out, by which the remaining bird had escaped. The Arabs say that they use old snake-holes, and make a second exit themselves, for security from the large carnivorous lizards, which are their great enemies. The retreat is always just under a bush, no doubt for the sake of greater consistency in the sand, which otherwise would certainly fall in and choke the inha-

bitants. I found new nests in process of construction as early as January. The fragments of eggs which I picked up are, as might have been expected, of a blue colour." This gentleman likewise met with this Chat in Palestine, and, writing on the ornithology of that country, states that upon a rolling plain to the south of Moladah "I believe we secured about a dozen in an hour; and the birds were not in flocks, but in scattered pairs. Yet it has nowhere been discovered in the intervening 1500 miles between its two known habitats. We never saw it afterwards; and the scrub where it resided cannot be more than ten miles in extent. It has been subjected to a divorcing process in its nomenclature. The female used to stand alone in the Berlin Museum marked *Saxicola ruficeps*; and again, unless I mistake, Sig. De Filippi has renamed a female specimen *Dromolæa chrysopygia*." We have carefully compared De Filippi's original description of the Chat obtained by him at Demavend, in Persia, and named *D. chrysopygia*, and consider with Canon Tristram that it is referable to the female of the present species.

Canon Tristram is the fortunate possessor of the eggs of this species, and kindly sends the following notes on its habits and nidification:—"I do not know what I can add about *Saxicola philothamna* to the few notes in 'The Ibis' for 1859 and 1867. Its habits are peculiar; and its being restricted to open, scrubby, and not bare districts, is to be noticed—also its perching more after the fashion of a Whinchat, on the top of a bush, than like a Wheatear, on the ground or on a rock. It builds under a bush-root, in a commodious spacious hole, made, I presume, by some large lizard, and having two entrances. The egg is large for the bird, measuring 24 by 18 millimetres, and is very delicate bluish white, sprinkled all over with very fine reddish spots."

The specimens figured are Canon Tristram's types, and are in winter-plumage; the adult male in summer-plumage we have described was obtained in Algeria by Loche, the date of capture not being stated, and is now in Dresser's collection. This latter bird will be found figured on another Plate.

In the preparation of the above article we have examined the following specimens:—

E Mus. H. E. Dresser.

a, ♂ *æst.* Algerian Sahara (*Loche*). *b*, *c*, ♂ *æst.* Algeria (*Fairmaire*).

E Mus. H. B. Tristram.

a, ♂, *b*, ♀. Aïn el Ibel, Algeria, November 8th, 1856 (*H. B. T.*), types. *c*, ♂. El Aghouat, Algeria, November 26th, 1856 (*H. B. T.*). *d*, ♀. El Aghouat, November 20th, 1856 (*H. B. T.*). *e*, ♂, *f*, ♀. Beersheba, Palestine, February 2nd, 1864 (*H. B. T.*).

E Mus. J. H. Gurney, jun.

a, ♂. Tibrem, Algeria, February 5th, 1870 (*J. H. G., jun.*).



RED - RUMPED CHAT.

SAXICOLA MÆSTA

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1 SAXICOLA XANTHOPYRNA
(JUV)
2 SAXICOLA MŒSTA
(♂ST)

Waterhouse

SAXICOLA MÆSTA.

(RED-RUMPED CHAT.)

Saxicola mæsta, Licht. Verz. Doubl. p. 33 (1823).*Saxicola erythropygia*, Taylor, Ibis, 1867, p. 61.

♂ *ad.* suprâ sordidè cinerascens, fronte et supercilio distincto albidis: tectricibus alarum saturatiùs brunneis, majoribus albido terminatis: remigibus cinerascenti-brunneis, secundariis vix albido terminatis: dorso postico, uropygio et supracaudalibus dilutè rufis: caudâ nigricanti-brunneâ, albo terminatâ, rectricum lateralium dimidio basali albo: gutture toto cum facie colloque lateralibus nigris: corpore reliquo subtùs fumoso-albicante, hypochondriis rufescente lavatis: subcaudalibus rufis: subalaribus nigris: rostro et pedibus nigris: iride brunneâ.

♀ [*♂ juv.?*] mari dissimilis: fuliginoso-brunnea: loris et supercilio angusto sordidè albis: regione paroticâ clariùs brunneâ: genis et gutture toto albis, plumis conspicuè basaliter nigris: tectricibus alarum dorso concoloribus, exterioribus saturatoribus dorsi colore obscurè limbatis, majoribus clariùs fulvescente terminatis: remigibus brunneis, angustè fulvo limbatis, secundariis latiùs, dorso postico, uropygio et supracaudalibus aurantiaco-ferrugineis: rectricibus nigris, angustissimè fulvescente limbatis et terminatis, apicibus ipsis albis, caudâ totâ conspicuè dimidiatim albâ: corpore reliquo subtùs fumoso-albo, subcaudalibus uropygio concoloribus: subalaribus nigris, carpalibus albo marginatis: rostro et pedibus nigris: iride brunneâ.

Adult Male (Nubia). Head, neck, and back dull brownish grey; forehead and a broad superciliary line passing back over the eye to the nape white; quills dark greyish brown, edged with light yellowish brown; secondaries indistinctly tipped with dirty white; wing-coverts dark brown, the larger coverts tipped with dirty white; lower part of the back, rump, and upper tail-coverts bright rufous; tail white at the base and to one third of the length in the central, increasing to about two thirds on the outer feathers, the remaining portion being blackish brown, tipped with white; throat, sides of the face and neck jet-black; underparts generally dull whitish, on the flanks washed with rufous; under wing-coverts black; under tail-coverts rufous; beak and legs black; iris brown. Total length 6·2 inches, culmen 0·6, wing 3·7, tail 2·7, tarsus 0·95.

Female, or Young Male (type of *S. erythropygia*). Above smoky brown; the lower back, rump, and upper tail-coverts bright orange-rufous; scapulars and small wing-coverts of the same colour as the back, the rest darker brown, with paler edgings, the greater coverts more conspicuously edged and tipped with fulvous-brown, inclining to whitish at the tips; quills dark brown, both these and the primary coverts narrowly margined with fulvous-brown, the secondaries broader; tail dark brown, narrowly edged with fulvous-brown, more conspicuously at the tip, where it shades into whitish, the whole of the feathers white at the base, not extending so far on the two centre feathers, where it is hidden by the upper tail-coverts; lores and a tolerably distinct eyebrow whitish; ear-coverts clearer brown than the head; cheeks and throat dull white, the black bases to the feathers showing through; rest of the under surface of the body smoky white, the flanks slightly washed with rufous, the under tail-coverts of the same orange-rufous as the rump; under wing-coverts black, those bordering the carpal bend of the wing edged with whitish; bill and feet black; iris brown.

OF this Chat nothing whatever is known further than that it inhabits Egypt and Arabia, where, according to Von Heuglin, it is probably sedentary, and frequents the borders of the desert and the rocky portions of the mountains. Mr. John Keast Lord met with it in Nubia, but published no particulars as to its habits. It was first described in Professor Lichtenstein's list of duplicates, the specimen being from Egypt; and, owing to its extreme rarity, it has not been burdened with synonyms, having, indeed, but one other, that of *S. erythropygia*, under which the female, or possibly the young male, was described by Mr. E. Cavendish Taylor. Captain Shelley, in his excellent 'Handbook to the Birds of Egypt,' writes that "this species of Chat is of rather rare occurrence in Egypt, where Mr. E. C. Taylor procured it, but it has never fallen under my notice." Captain Shelley was the first to observe and point out the identity of *Saxicola erythropygia* with the present species; and, the former having been referred to *Saxicola philothamna*, he writes that "it has been erroneously confounded with *S. philothamna* of Tristram by Dr. von Heuglin (Orn. N. Afr. p. 355); but it is certainly distinct from that species." Captain Shelley further gives a tabular comparison between these two species, showing that *S. erythropygia* has the head and nape ashy brown, instead of white, shaded with dusky, as in *S. philothamna*, the rump and upper tail-coverts bright rufous, instead of white shaded with pale rufous, the basal two thirds of the tail white, tinted with rufous at its junction with the brown end, instead of having the basal half bright rufous, and the under tail-coverts bright rufous, instead of buff as in *S. philothamna*.

Respecting the habits and nidification of this bird nothing whatever is known.

The specimens described and figured are the only two we have had an opportunity of examining; particulars of locality are given below:—

E Mus. H. B. Tristram.

a, ♂. Hor Tamanib, Nubia (*John Keast Lord*).

E Mus. E. Cavendish Taylor.

a, ♀ (or ♂ *juv.*). Egypt, type of *S. erythropygia* (*E. C. T.*).

SUPPLEMENTARY NOTES

ON

TRISTRAM'S CHAT AND THE RED-RUMPED CHAT.

WHEN Tristram's Chat and the Red-rumped Chat were figured and described in Parts XVII. and XVI. respectively of the present work, I had not had an opportunity of examining the types in the collection at Berlin, and considered that *Saxicola philothamna*, Tristram, was quite distinct from *Saxicola mæsta*, Licht., especially as both were stated to be in the Berlin Museum. On visiting Berlin, however, in September last (1873) I ascertained that the specimen labelled *Saxicola philothamna* is merely a female, whereas Lichtenstein's type of *Saxicola mæsta* is the adult male of the same species in full summer plumage. This being the case, the bird I described in Part XVII. of the present work, under the name of Tristram's Chat must stand as *Saxicola mæsta*, the synonymy being as follows:—

Saxicola mæsta, Licht. Verz. Doubl. p. 33, "Egypt" (1823).

Saxicola philothamna, Tristr. Ibis, 1859, p. 58, "Algeria."

I also find that *Saxicola chrysopygia*, De Fil., which was put with a query as a synonym of *S. philothamna* in Part XVII., does not apply to that species, but is a distinct bird.

With regard to the species described and figured in Part XVI. of the present work under the name of the Red-rumped Chat (*Saxicola mæsta*), on investigating with Mr. Blanford the types in the Hemprich and Ehrenberg collection, I found that the bird described by Ehrenberg as *Saxicola xanthoprymna*, is nothing else but an immature example of the bird I have described as the Red-rumped Chat, the synonymy of which will accordingly be as follows:—

Saxicola xanthoprymna, Ehr. Symb. Phys. fol. dd, "Nubia" (1829).

Saxicola erythropygia, Taylor, Ibis, 1867, p. 61, "Egypt."

The type of this species in the Berlin Museum is a younger bird than the one obtained and described by Mr. Cavendish Taylor, of which I have given a figure; and I have deemed it advisable to figure it also, which I have done, and have likewise on the same Plate figured a male of Tristram's Chat (*Saxicola mæsta*) in full breeding-plumage, in which stage it was described by Lichtenstein.



I. EASTERN PIED CHAT.

SAXICOLA MORIO

2. 3. PIED CHAT

SAXICOLA LEUCOMELA

SAXICOLA LEUCOMELA.

(PIED CHAT.)

Motacilla leucomela, Pall. Nov. Com. Petr. xiv. p. 584. no. 6, pl. 22. fig. 3 (1770).*Muscicapa leucomela* (Pall.), Lath. Ind. Orn. i. p. 469. no. 7 (1790).*Sylvia leucomela* (Pall.), Temm. Man. d'Orn. p. 138 (1815).*Enanthe pleschanka*, Vieill. Nouv. Dict. xxi. p. 423 (1818).*Saxicola leucomela* (Pall.), Temm. Man. d'Orn. i. p. 243 (1820).*Saxicola lugens*, Licht. Verz. Doubl. p. 33 (1823).*Vitiflora leucomela* (Pall.), Bp. Comp. List, p. 16 (1838).*Saxicola atricollis*, v. Müll. Naumannia, 1851, iv. p. 28.? *Saxicola capistrata*, Gould, B. of Asia, part xvii. & pl. (1865).*Figuræ notabiles.*

Temm. Pl. Col. 257. fig. 3; ?Werner, Atlas, *Insectivores*, pl. 72; Gould, B. of Eur. pl. 89;
Bree, B. of Eur. ii. pl. to p. 133.

♂ *ad.* pileo et nuchâ albis, illo griseo adumbrato: dorso, tectricibus alarum, gulâ, gutture, et capitis collique pectorisque lateribus nigerrimis: remigibus nigris in pogonio interno conspicuè albido marginatis, secundariis vix albido apicatis: uropygio et supracaudalibus albis: rectricibus centralibus dimidio basali albis, dimidio apicali nigris, reliquis albis latè nigro apicatis: pectore et corpore imo subtùs albis, subcaudalibus pallidè rufis: subalaribus et axillaribus nigris.

♀ *ad.* haud a mare distinguenda.

Adult Male (Egypt). Crown and nape white, the former washed with dull grey; rump, upper tail-coverts, tail, except at the terminal portion, breast, and abdomen pure white; back, scapulars, wing-coverts, sides of the head and neck, extending just above the eye, throat, and upper parts of the flanks jet-black; quills blackish, broadly margined on the inner web with white, showing a white surface when the wings are opened; secondaries narrowly tipped with white; central tail-feather white on the basal, black on the terminal half; remaining rectrices white, broadly tipped with black, all having a very narrow white tip; under tail-coverts pale rufous; under wing-coverts and axillaries black; beak and legs black; iris dark brown. Total length 6·4 inches, culmen 0·7, wing 3·75, tail 2·75, tarsus 1·0.

Adult Female (Jericho, 30th December). Precisely similar to the male, but, if any thing, slightly duller in colour.

Nestling (Astrachan). Head and back dull earth-brown, the feathers edged with rufous; wings blackish, all the feathers bordered and tipped with light reddish brown; tail black, broadly tipped with rufous-buff; rump and upper tail-coverts white; underparts dull yellowish buff, on the breast and throat darker, and marked with dull brown.

Obs. Judging from the series before me, it would seem that very old specimens do not in the least differ

in winter from the plumage they wear in the summer season; for I have specimens obtained in May and in December which are absolutely identical and closely resemble the adult male I have figured. The grey tinge on the crown appears to be rather a sign of immaturity as regards the males, and all those which are marked as being females by dissection have this grey tinge on the crown; but the males shot in Persia have it also very apparent, and all these were shot in the summer. The two specimens in Canon Tristram's collection from Algeria have both the crissum and under tail-coverts as nearly as possible pure white, but do not otherwise differ from the other examples. All the specimens, however, constituting the entire series, agree *inter se* in having the inner webs of the primaries white, and can thus be clearly distinguished from *Saxicola morio*.

THE present species and *Saxicola morio* have been so frequently mistaken for each other that it is by no means easy to trace their respective geographical ranges; but judging chiefly from specimens I have examined, I infer that the present species alone occurs in Southern Europe and North-western Africa; whereas it extends throughout South-eastern Europe and North-Eastern Africa, and is there found with *S. morio*, which, however, is far less numerous than *S. leucomela*.

The present species has been met with in Italy, where, according to Count Salvadori, a single specimen was captured in Liguria in 1860, and is now in the Genoa Museum. Doderlein says that it has never been met with in Sicily. Von der Mühle records it from Greece, and states that he shot one in Maina. Messrs. Elwes and Buckley write (*Ibis*, 1870, p. 197) that Dr. Cullen informed them it is not uncommon in summer near Kustendji, in Turkey, and breeds there; and Professor von Nordmann speaks of it as very common in New Russia, arriving in the month of February, and being, therefore, one of the earliest of the spring migrants. Jacovleff states that it is one of the commonest species in the steppes of the province of Astrachan, but he never observed it in the vicinity of the town itself or the Delta of the Volga. Professor Bogdanoff says that it ranges as far as the Samarska Luka; and Severtzoff met with it in the Government of Voronege. Falk records it as not rare on the Central Volga, the Kama, and the Oka. Captain Clark-Kennedy informs me that he observed it in pairs near Smyrna in the month of May, and a friend of his observed it amongst the ruins of Ephesus. I also find it recorded by Canon Tristram (*Ibis*, 1867, p. 95) as very common in Palestine "throughout the year in the rocky regions overhanging the Jordan valley, in the Judæan wilderness;" and Mr. C. W. Wyatt (*Ibis*, 1870, p. 13) says that it is "the only Chat that is universally distributed throughout the Sinaitic peninsula, occurring everywhere from the highest mountain regions to the sea-shore." In Egypt, Nubia, Arabia, and Abyssinia the present species decidedly predominates, though both it and *Saxicola morio* appear to occur. It is, however, almost impossible to judge which notes refer to this species and which to *S. morio*, as scarcely any of the travellers give descriptions which enable me to state with certainty to which species they refer, though all seem to agree that two species occur. Von Heuglin (sub nom. *S. lugens*) states that a Chat which I take to be the present species, is a resident in Egypt and Arabia, and lives in pairs in the deserts and along the rocky shores, rarer in Nubia and the coast regions of Sanakin. I may mention that all the specimens from Egypt I have examined belong to the present species, and not to *S. morio*. Captain Clark-Kennedy informs me that he met with two species in Egypt, one being very abundant in February and March, whereas the other was

only occasionally seen. He has, however, parted with his specimens; and I am therefore unable to state with any degree of certainty which of the two species, the present one or *S. morio*, is the one he refers to, but have little doubt that the one which he found common is *S. leucomela*; and he informs me that he also found it common near Suez, on the Red Sea. Captain Shelley also states that it is very common and resident in Egypt, and one of the commonest species found there during the winter. Mr. Blanford says that "it appears to replace *S. deserti* in the highlands of Abyssinia. It was seen only in the temperate region, where it abounded till the middle of March, after which it disappeared." In North-western Africa the present species alone occurs, and appears to be common. Mr. Taczanowski (J. f. O. 1870, p. 47) found it numerous in the southern portions of the Atlas range and the desert, where it sings throughout the winter; and Canon Tristram writes (Ibis, 1859, p. 300), it is "less confined to the bushy portions of the desert, and does not appear to come so far north even as the M'zab country. It dwells in the boundless deserts of the 'Touareg, south of the furthest French imaginary line. It was only here and in the Chamba country, south-west of Waregla, in lat. 30° 50', that I obtained specimens. It is very shy, and possesses great powers of flight;" and Mr. J. H. Gurney, jun. (Ibis, 1871, p. 80), writes "it is only on the dreary route between Gardaia and Berr̄yan, where there is scarcely a particle of herbage to harbour insects, that I observed this bird, except in one instance, when I shot a specimen at Mellika; and it would seem that, unlike its congeners, *Dromolæa leucopygia* and *D. leucocephala*, it but rarely enters oases. On the Berr̄yan route many pairs were seen, mingled, though not actually consorting, with a few *S. deserti*."

To the eastward the present species certainly occurs in Persia, whence I have specimens collected by Mr. Blanford and Major St. John; and De Filippi records it from Tehran. In India, so far as I can ascertain, its close ally *S. morio* alone occurs.

In its habits the present species is said to differ but little from other allied Chats; and Canon Tristram informs me that he has taken its eggs, which in colour closely resemble those of *Saxicola erythræa*, but differ somewhat in size. A nest he took in Palestine, near the Dead Sea, containing young, was placed in the stone wall of a barley-field.

The specimens figured on the foreground of the same Plate with *Saxicola morio* are an adult male obtained in Egypt, and a nestling from Astrachan, both being the specimens described, and are in my collection.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a, b, ♂. Egypt (*Rogers and E. C. Taylor*). *c*. Assouan, Upper Egypt, January 31st, 1863 (*J. H. Cochrane*).
d, ♂. Marsaba, Palestine, January 15th, 1864 (*H. B. Tristram*). *e, pullus*. Astrachan (*Möschler*).

E Mus. Lord Walden.

a, ♂. Shore of Dead Sea, January 20th, 1864 (*H. B. Tristram*).

E Mus. H. B. Tristram.

a, Algeria (*Loche*). *b*, ♂, Hadjira, December 23rd, 1856 (*H. B. T.*). *c*, ♂, *d*, ♀, Bethany, March 29th, 1858 (*H. B. T.*). *e*, *f*, ♀, Hills near Jericho, December 30th, 1863 (*H. B. T.*). *g*, ♀, Wady Khudisah, January 25th, 1864 (*H. B. T.*). *h*, Palestine, February 1st, 1864 (*H. B. T.*). Urtas, Palestine, February 10th, 1864 (*H. B. T.*).

E Mus. Ind. Calc.

a, ♂, Shiraz, June 13th, 1869 (*Major St. John*). *b*, *c*, Shiraz. *d*, Shiraz, August. *e*, ♂, Rayin, S.S.E. of Karman, May 2nd, 1872 (*W. T. Blanford*).

E Mus. G. E. Shelley.

a, *b*, ♂, Egypt, February 26th, 1868 (*G. E. S.*).

E Mus. Acad. Cantabr.

a, *b*, Djebel Araif, January 1870 (*Tyrwhitt Drake*).

E Mus. J. H. Gurney, jun.

a, ♂, Mallika, Algeria, April 23rd, 1870 (*J. H. G., jun.*).

SAXICOLA MORIO.

(EASTERN PIED CHAT.)

Saxicola morio, Ehr. Symb. Phys. fol. aa (1829).*Saxicola leucomela*, Jerd. B. of India, ii. p. 131 (1863, nec Pall.).*Saxicola leucomela*, Gould, B. of Asia, part xviii. (1865, nec Pall.).*Saxicola capistrata*, Hume, Ibis, 1868, p. 233.*Saxicola talas*, Severtzoff, Izvest. Imp. Obsch. Estest. viii. pt. ii. p. 119 (1873).*Figuræ notabiles.*

Gould, B. of Asia, part xviii.; Severtzoff, tom. cit. pl. viii. fig. 1.

♂ *ad.* *S. leucomelæ* persimilis, sed remigibus in pogonio interno nigris nec albo marginatis, et crisso albo facilè distinguendus.

♀ *ad.* haud a mare distinguenda.

Adult Male (Chemkend, 5th March). Differs from *S. leucomela* merely in having the inner webs of the quills black, showing, when the wing is opened, a black surface, whereas the under surface of the wing is white in *S. leucomela*. In the present species the under tail-coverts and crissum are usually pure white.

Adult Female. Similar to the male.

Obs. The chief character by which the present species may at once be distinguished from *S. leucomela* is the colour of the under surface of the wing, which is invariably black, though rather less black in some specimens than in others. One specimen from Lahore, in my own collection, has the under tail-coverts slightly washed with rufous; but all the rest have this part pure white. In measurements I find no average difference between the present species and *S. leucomela*; for after measuring the entire series of each species, and striking an average, I find the difference very trifling; but specimens of each vary *inter se*, and it would be easy to select one or two of either as being rather larger or smaller than the other species, as the case may be. Specimens of *S. morio* vary as follows:—culmen 0.72–0.8, wing 3.62–3.75, tail 2.62–2.97, tarsus 1.0–1.07; and of *S. leucomela* as follows:—culmen 0.75–0.8, wing 3.5–3.8, tail 2.65–2.8, tarsus 1.0–1.09. A specimen of the present species, obtained in April in Mongolia by Père David, and now in Canon Tristram's collection, has the feathers on the back edged with dull brown, and the quills are dull dark brown. I may add that, as a rule, the present species has more grey on the crown and nape than *S. leucomela*.

THIS, the eastern form of our Pied Chat, occurs in Siberia, India, Persia, and likewise is met with in South-eastern Europe, Syria, and North-eastern Africa, but is there much rarer than *S. leucomela*. I have one single specimen from the Crimea, which is the only example of this form amongst the numbers of Pied Chats I have examined from South-eastern Europe. So

far as I can ascertain, the chief characteristic of this species, the black undersurface of the wings, this portion being white in *S. leucomela*, has been overlooked by most naturalists, who have generally considered the colour of the crissum to constitute the chief distinguishing character; but, after having examined a large series of specimens, I find that no reliance can be placed on this characteristic, the colour of the under surface of the wing being alone constant; for amongst the series of Indian specimens of the present species I find one which has the vent slightly tinged with rufous, and several of my examples of *S. leucomela*, notably those from North-west Africa, have the crissum and under tail-coverts pure white, though otherwise they do not in the least differ from those with red under tail-coverts. At the same time it is only in exceptional cases that the present species has the under tail-coverts tinged with rufous, or *S. leucomela* that portion white.

Canon Tristram states that he only once obtained the present species in Palestine; but I find no specimen amongst his series of Chats which he has sent to me for examination.

Hemprich and Ehrenberg obtained both the present species and *S. leucomela* in Egypt and Arabia, and appear, like many other naturalists, to have made the colour of the crissum and under tail-coverts a distinguishing character; but when at Berlin with Mr. Blanford in September last, we made out that one of their specimens, the type of *S. morio*, is the present species, and not the *S. leucomela* of Pallas. The various travellers who have visited, and written on the ornithology of, North-eastern Africa, speak of two species as occurring there, one being common, and the other, which I take to be the present bird, rare; but so much confusion has hitherto existed that it is impossible to decide to what species the various authors refer without making a careful examination of the specimens obtained. In North-western Africa, so far as I can ascertain, it certainly does not occur. Its real home appears to be in Asia; and it is common in India, whence I have many specimens; but it is there a winter visitant, retiring into Siberia to breed. Still it appears also to breed in Persia; for I have before me an example, obtained by Major St. John, in the month of June, near Shiraz. Dr. Jerdon (B. of Ind. ii. p. 131) says that it occurs in the upper provinces of Hindustan during the cold weather only, and is common in Afghanistan. Captain Beavan obtained specimens at Umballah in November, and Dr. Scott at the same place in January. The former gentleman states (Ibis, 1867, p. 452) that it is more a bird of the bushes or trees than others of the Chat family, flying into them when disturbed, and alighting on a conspicuous bough; but when wounded it takes readily to holes in the ground. Severtzoff met with it in Turkestan; but none of the older Siberian travellers record it from that latter country. Mr. Taczanowski, however, states that during migration it is rare in Kultuk, and passes there in April and again in October, but has not been observed during the summer. It has, he further says, been observed at Darasun, in Dauria, during migration. Père David met with it in Mongolia, where, he says, it is abundant in the western mountains of that country throughout the fine weather.

In its habits the present species is said not to differ from *S. leucomela*. I do not possess its eggs; but they doubtless closely resemble those of the European Pied Chat.

The specimen figured, on the same Plate as *S. leucomela*, in the background, is an adult male obtained at Chemkend, and is the same bird that I have described.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a. Crimea (*Whitely*). *b.* Lahore (*Marshall*). *c*, ♂ *ad.* Chemkend, March 5th, 1866 (*Severtzoff*).

E Mus. Lord Walden.

a, ♂. Chemkend, March 21st, 1866 (*Severtzoff*). *b.* N.W. Provinces, India (*Dr. Jerdon*). *c*, *d*, *e*, ♂. Umballah, India (*Beavan*). *f*, ♂. Umballah, January 1866 (*Dr. Scott*). *g.* Lahore (*Marshall*).

E Mus. H. B. Tristram.

a. Lahore (*Marshall*). *b*, ♂. Mongolia, April 27th, 1866 (*Père David*).

E Mus. Ind. Calc.

a, ♂. Shiraz, June 1870 (*Major St. John*).



HOODED CHAT.
SAXICOLA MONACHA

SAXICOLA MONACHA.

(HOODED CHAT.)

Saxicola monacha, Temm. Pl. Col. iii. pl. 359. fig. 1 (1825, ex Rüpp. MS.).*Dromolæa monacha*, Cab. Mus. Hein. Th. i. p. 9 (1850).*Saxicola gracilis*, Licht. Nomenc. p. 35 (1854).*Figuræ notabiles.*

Temm. Pl. Col. iii. pl. 359. fig. 1 (♂); Shelley, B. of Egypt, pl. 2 (♂, ♀).

♂ *suprà niger*: pileo summo, dorso postico, uropygio et supracaudalibus purè albis: facie et collo lateralibus cum gutture toto et pectore superiore nigris: pectore inferiore et corpore reliquo subtùs albis: subalaribus nigris, exterioribus albis: alâ totâ nigrâ, secundariis vix albo terminatis: caudâ albâ, rectricibus exterioribus paullò brunneo notatis, duabus centralibus omninò brunneis, extùs vix rufescente iavatis.

♀ *isabellino-cineracea*: uropygio et supracaudalibus pallide isabellino-fulvis: loris et supercilio indistincto fulvescenti-albidis: facie laterali brunnescenti-arenariâ, regione paroticâ paullò saturatiore: subtùs fulvescenti-arenaria, gulâ pallidiore, pectore summo lateribusque brunnescentibus: subalaribus lactescenti-fulvis: tectricibus alarum minimis dorso concoloribus, reliquis brunneis, angustè fulvido marginatis: remigibus brunneis, angustè fulvido limbatis, secundariis latiùs marginatis et magis distinctè apicatis: caudâ fulvescenti-albâ, brunneo terminaliter notatâ, rectricibus duabus centralibus omninò brunneis.

Adult Male (Jebel Usdum, January 1st). Head from the line of the eye upwards, nape, lower part of the back, rump, and upper tail-coverts pure white, the two central tail-feathers white at the base to about one third of their length, the rest being brown, narrowly edged with brownish white; rest of the tail-feathers white, some of the outer ones having obsolete pale brown markings near the tip; back, wings, and scapulars jet-black, the secondaries narrowly edged with white; loreal space, auriculars, throat, sides of face and neck, and entire breast jet-black, rest of the underparts pure white, excepting the under wing-coverts, which are black, here and there edged with white, the feathers on the edge of the wing being broadly margined with that colour; beak and legs black; irides brown. Total length 6·7 inches, culmen 0·92, wing 4·1, tail 3·2, tarsus 0·95.

Adult Female (Nubia, February 1863). Head, neck, and back hair-brown, the latter shading off into dull cream-colour on the lower part; rump and upper tail-coverts pale cream-colour; tail reddish cream-coloured, the two central feathers having the terminal two thirds dark brown, edged with light brown, the outer feather on each side with the terminal portion of the outer web, and a large spot on the inner web, dark brown, the rest of the feathers having the terminal portion brown; scapulars the same as the back; quills and wing-coverts dull brown, edged with brownish white; entire underparts buffy white, lighter on the chin and throat; auriculars tinged with rufous; sides of the body washed with light brown; beak and iris dark brown; legs black.

In the winter plumage the male has the black feathers on the back slightly edged with fulvous, and those on the breast here and there edged with white; in the female we can detect no difference.

Obs. Both *Saxicola pallida*, Rüpp., and *S. isabellina*, Temm., have been by many ornithologists considered to be referable to the female of this species. Dr. Finsch, however, has examined the type specimen of the former, now in the Senckenberg Museum, and pronounces it to be a perfectly good though somewhat aberrant species, approaching nearest to *S. albicans*, Wahlb., and nothing like *S. monacha*. We have ourselves carefully compared Temminck's figure and description of *S. isabellina* with the female of the present species, and are now of opinion that they refer to a perfectly distinct species, probably *S. saltator*, Ménétr.

THIS Chat is an inhabitant of North-eastern Africa and Palestine, thence extending into Baluchistan and Scinde. It has been stated by Major Loche to inhabit Algeria; but subsequent researches proved that the examples found there are referable not to this but to the closely allied *Saxicola leucopygia*, Brehm; and we can find no authentic instance of the occurrence of this present species in Western Africa. In Egypt it is, according to Mr. E. Cavendish Taylor, very rare; he obtained two specimens in the month of January. Captain Shelley writes that "this species appears to be nowhere common, although it ranges throughout Egypt and Nubia, and is a resident, frequenting the desert and rocky districts. I only met with a small colony of these Chats at El Kab, where I obtained a male and female, in full breeding-plumage, on the 26th of February." Von Heuglin states that it has been obtained in Abyssinia; and Mr. C. W. Wyatt records it from Sinai, and states that "of the Chats, *Saxicola monacha* was the only species that was abundant, and was chiefly confined to one part of the marshes and sandhills, where the samphire grew, on the top of which they used to perch. Cock birds were more plentiful than hens."

Canon Tristram met with it in Palestine, but only at the south end of the Dead Sea, about the salt-mountain of Jebel Usdum, and states that when in full plumage it is the most elegant of the group. To the eastward it occurs in Baluchistan, where Mr. Blanford obtained a series of specimens, which he has kindly placed at our disposal for examination. Regarding the range of this species there and in India, he writes to us as follows:—"I found it in Baluchistan on sandhills, and in the open desert country near the coast, in the winter. Hume got it, he says, in and immediately at the foot of the stony hills which divide Kelat from Sindh, and in the similar hills that run along the Mekran coast. In the plains of Sindh this species never occurs, being there, curiously enough, replaced by a much smaller, but in many respects similar, species, *Saxicola capistrata*."

But little has been recorded respecting the habits of this bird; and we are indebted to our friend Canon Tristram for the following notes on this head:—" *Saxicola* (or *Dromolæa*) *monacha* is very reluctant to have its domestic habits noticed. It is very shy and wary, never trusting to cover; for it lives on the most desolate salt marl hills and plains; and in the dreary wastes between Masada (Sebbet) and the Dead Sea, it is the only living thing I ever saw. One or two seem to range over a wide tract, without neighbour or companion. They perch on the edge of some marl-mound, and drop over it as you approach, taking a long, skimming flight, more vigorous than that of many of their congeners. The only note I can remember is a long-drawn call-note, plaintive and monotonous.

"The nest is placed in a very different position from that of *S. philothamna*, in a hole under an overhanging ledge of crumbling marl, not far in, and flat and loose. The nest I got contained

five eggs, in colour lovely whitish blue, darker than those of *Saxicola philothamna*, but of similar character, and with the red spots more collected in a zone round the larger end. They are a more elongated egg, and the mean measurement is 23 by 16 millimetres. The ground-colour is very much paler than in the palest Wheatear's egg.

"They sometimes breed before the male has assumed the perfect summer plumage. I do not know the nestling either of *S. philothamna* or this species."

The male bird we have figured was obtained by Canon Tristram in Palestine, and the female by Mr. Cochrane in Nubia.

In the preparation of the above article we have examined the following specimens:—

E Mus. H. E. Dresser.

a, ♂. Kalabshee, Nubia, February 4th, 1863 (*J. H. Cochrane*). *b*, ♀. Nubia, February 1863 (*J. H. Cochrane*).

E Mus. H. B. Tristram.

a, ♂. Jebel Usdum, Palestine, January 27th, 1864. *b*, ♂. Sabkha Safich, Palestine, January 28th, 1864 (*H. B. T.*).

E Mus. Ind. Calc.

a, ♂. Gwadar, Baluchistan, January 2nd, 1872 (*W. T. Blanford*). *b*, ♂. Samán, Baluchistan, January 27th, 1872 (*W. T. B.*). *c*, ♂. Ras Malán, Baluchistan, November 27th, 1871 (*W. T. B.*). *d*, ♀. Dasht river, near Gwetar Bay, Baluchistan, January 25th, 1872 (*W. T. B.*). *e*, ♀. Bahn Kelat, Persian Baluchistan, February 1st, 1872 (*W. T. B.*).



WHITE RUMPED CHAT.
SAXICOLA LEUCOPYGIA
135

SAXICOLA LEUCOPYGA.

(WHITE-RUMPED CHAT.)

Saxicola leucura (Gm.), Licht. Verz. Doubl. p. 32, "Egypt, Nubia" (1823, nec Gm.).

Saxicola cursoria, Audouin & Savig. Desc. de l'Egyp. p. 274, pl. 5. fig. 1 (1825, nec Vieill.).

Saxicola leucura (Gm.), Licht. Nomencl. Av. p. 36, "Arabia, Egypt, Nubia" (1854, nec Gm.).

Vitiflora leucopyga, C. L. Brehm, Vogelf. p. 225, "N.E. Africa and S. Europe" (1855).

Vitiflora leucuros, C. L. Brehm, ut suprâ (1855, partim).

Lutucoa leucopyga, Paul v. Württ., fide C. L. Brehm, ut suprâ (1855).

Lutucoa leucocapilla, Paul v. Württ., fide C. L. Brehm, ut suprâ (1855).

Dromolæa leucocephala, A. E. Brehm, Journ. f. Orn. 1858, p. 62, "Egypt."

Dromolæa leucopygia, A. E. Brehm, tom. cit. p. 66, "Africa."

Dromolæa leucopygia, Br., Tristram, Ibis, 1859, p. 297, "Algeria."

Dromolæa monacha, Loche, Exp. Scient. de l'Alg. i. p. 199, "Algeria" (1867, nec Rüpp.).

Dromolæa nigra, Loche, tom. cit. p. 200, "Algeria" (1867).

? *Saxicola leucuroides*, Heuglin, Orn. N.O.-Afr. p. 358. no. 308, "Abyssinia" (1869).

? *Saxicola syenitica*, Heuglin, tom. cit. p. 358, no. 309, "Upper Egypt" (1869).

Saxicola leucocephala (Br.), Heuglin, tom. cit. p. 359. no. 310, "N.E. Africa, West Africa, Algeria, Palestine" (1869).

♂ *ad. niger*, remigibus magis fusciscentibus: pileo, supracaudalibus, subcaudalibus crissoque purè albis: rectricibus centralibus ad basin albis, ad apicem nigris vix albido apicatis, scapis nigris, reliquis albis ante apicem sordidè nigricantibus: rostro et pedibus nigris: iride fuscâ.

Av. jun. præcedenti similis, sed sordidior, pileo dorso concolori: rostro et pedibus paullo pallidioribus.

Pullus sordidè fusciscenti-niger: supracaudalibus, subcaudalibus crissoque albis: rectricibus centralibus fusciscenti-nigris, albido apicatis, reliquis albis versùs apicem nigricante notatis.

Adult Male (Nubia). Head above, nape, rump, upper tail-coverts, and a couple of feathers in one wing pure white, the under tail-coverts and crissum being also of this colour; central tail-feathers on the terminal half and the shafts black, the remaining portion being pure white; rest of the rectrices white, except towards the tip, where there is an irregular blackish band; rest of the plumage glossy jet-black, with steel-blue reflections, except the wings, which are dull blackish; beak and legs black; iris brown. Total length 6 inches, culmen 0.82, wing 4.1, tail 2.9, tarsus 1.1.

Female. Undistinguishable from the male in plumage.

Breeding-plumage of the first year. Crown black, with one or two white feathers; rest of the plumage similar to the adult male above described, but the colours are rather duller.

Immature bird of the year. Similar to the specimens last described, but the beak is shaded with yellow towards the tip and on the lower mandible; legs dark brown.

Nestling (Nubia, April). Dull black, except the rump, upper and under tail-coverts, crissum, and tail; central tail-feathers black, except at the tip, where they are white; remaining rectrices white, marked with blackish brown towards the tip; beak yellowish; legs dull brown.

Obs. The immature and adult birds of this species have for long been considered and referred to as distinct, the former under the name of *S. leucopygia*, and the latter under that of *S. leucocephala*; but there is now no doubt that they are the same species. This bird not unfrequently breeds in the immature plumage, which has tended to confuse matters not a little. I have in the series before me specimens with black crowns, others with only a few white feathers on that part, one in particular with a single one, others white with a few black feathers, and, again, others with pure white crowns, thus showing a perfect gradation from the black to the white crown. The average size of a dozen specimens of both sexes is—culmen 0·85 inch, wing 3·98, tail 3·03, tarsus 1·04.

THE present species has been so long confounded with *Saxicola leucura* and *Saxicola leucuroides*, that it is not very easy to ascertain which notes refer to this, and which to *S. leucura*. It may, however, be taken for granted that all references to *S. leucura* from N.E. Africa must be taken to mean the present species, as the Black Chat does not appear to occur there, but only this bird, though in North-western Africa both birds are found.

The White-headed Chat is only known to inhabit Northern Africa and Palestine. Canon Tristram, who, when first in Algeria, looked on the immature and adult birds of the present species as being distinct, says that he did not observe the latter so far north as the former. Mr. J. H. Gurney, jun., however, states (*Ibis*, 1871, p. 79) that he found the adult and young birds frequenting the same localities. They were, he says, "common in the oases of Gardai, not actually in the gardens, but all about the 'weds' (*i. e.* dry rocky watercourses) and on the wells, where I suspect they breed. They also enter the town freely, to perch upon the flat-roofed houses. Their flight is slightly undulating." Major Loche, who refers to it (*l. c.*) under the names of *D. monacha* and *D. nigra*, states that his party first obtained it near Ouarglo, on the extreme confines of the French possessions in the Sahara, and he subsequently found its nest in the oases of the Beni-Mزاب. It has likewise been met with in West Africa, where, according to Hartlaub (*Orn. W. Afr.* p. 66), it has occurred in Sierra Leone. In North-east Africa it has been met with in Egypt and Nubia. Captain Shelley, writing on the ornithology of Egypt, says (*Ibis*, 1871, p. 53), "these birds are first met with by the Nile tourist at Assouan, and on entering Nubia become extremely abundant. As early as April I saw several young birds, all black-headed, two of which I shot, in company with their undoubted parents, white-headed birds, of which I likewise killed two. It is comparatively rare to meet with a purely black-headed specimen, most having one or more white feathers on the crown. I have shot them with the black and white feathers mixed in nearly equal proportions. I never saw a black-headed bird paired with a white-headed one; but Mr. E. Cavendish Taylor tells me that he has observed them together: the rarity of such an occurrence may, I think, be explained by their choosing their mates the first year, and consequently pairs being of the same age.

"These birds are only shot in Egypt by the Nile tourists—that is, killed before the month of April, in the early part of the breeding-season. Now, if a white-headed specimen is shot, its

mate would probably not pair again until the traveller had left the country; and should it select for its future partner a black-headed bird, that bird by the following year, before it can be observed by the ornithologist, will have gained the white head; and consequently it must be extremely rare to observe black-headed and white-headed birds paired. On account of the rare occurrence of birds of this species being paired while in their different plumages, I am led to consider that the white head is attained after the first breeding-season.

“In conclusion, I propose that the name *Saxicola leucocephala* be erased from our lists of species, as only applicable to birds of a certain age, and that that of *S. leucopygia* be made to include them all. Otherwise while the parent bird might be ‘*leucocephala*,’ the young one from its nest would be ‘*leucopygia*.’”

Dr. Leith Adams, who falls into the same error as so many naturalists, and considers the adult and immature to belong to two species, writes (*Ibis*, 1864, p. 18) that it is the commonest Chat in Nubia, where it frequents villages and ruined buildings, and delights to sport around deserted villages and the ruined temples of the Pharaohs. He saw it at Thebes; but it was not common north of the First Cataract. Dr. Th. von Heuglin (*J. f. O.* 1867, p. 202, and 1869, p. 154) clearly demonstrates the identity of *S. leucopygia* and *S. leucocephala*, as also that the present species and *S. leucura* are distinct, and states that the present species is a resident in Arabia, Egypt, Nubia, and the Bischarin Mountains and has been met with on the Red Sea to 18° N. lat.; it there inhabits the open desert as well as the bare mountains, and is seldom to be met with in cultivated tracts. Mr. C. W. Wyatt (*Ibis*, 1870, p. 13) records the White-headed Chat as found on the peninsula of Sinai, where it is common everywhere throughout the mountain-district; and Canon Tristram, who met with it in Palestine, states (*Ibis*, 1867, p. 92) that it occurs at the south end of the Dead Sea, about the salt mountains of Jebel Usdum, and also the region extending much further into the rocky wilderness and higher up the western shores of the Dead Sea; he also records it as found in the rocks above Engedi.

In its habits the present species closely resembles the Black Chat. Dr. Brehm writes (*J. f. O.* 1858, p. 65) that “it is shy and exceedingly cautious when it notices that any one is following it. It frequents the walls of the towns and the neighbourhood of inhabited places, and was met with at Assuan and the monastery on Mount Sinai. I never recollect to have observed it trip about as if dancing, as does *Saxicola leucura*. It frequents the serrated and bare mountains of the Nile-valley and the desert, and prefers the granite and old formation to the limestone ranges, and is therefore more common at Assuan, near the cataracts, and in Arabia Petræa. It sings extremely well. We found its nest in the beginning of March in a hole of a rock, where it was impossible to reach it. The fledged young ones are usually to be seen in April. Most likely it commences nidification (in Egypt) already in the early part of January.” Canon Tristram also, writing on its habits as observed by him in Algeria, says (*l. c.*):—“it is very pugnacious, and lives all the winter in pairs, each couple preserving its own domain undisturbed. I have watched a male perched on a point of a rock, with his white tail expanded like a fan and perfectly erect, whistling loud defiance to a rival at the other side of the ravine. The challenge is speedily taken up, and they advance nearer each other, till, after a very short encounter, they retire to their respective sides. No doubt the scarcity of their insect food compels the Rock-Chats to distribute themselves very sparsely.”

The White-rumped Chat feeds almost exclusively on coleoptera and various other sorts of insects; but Dr. Brehm states that he has known it to eat the seeds of the pomegranate.

I am unfortunately unable to describe the nest and eggs of this species, as I do not possess them in my collection, and have been unable to borrow them any where.

The specimens figured and described are in the collection of Captain Shelley, excepting the adult male, which is a Nubian specimen in my own collection.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a, ♂. Algerian Sahara. *b, c*. Egypt (*Shelley*). *d*. Egypt (*E. C. Taylor*). *e, f*. Egypt (*Rogers*). *g*. Ghizeh, Egypt (*S. S. Allen*). *h*, ♂. Hill of Abou Seir, Second Cataract, Nubia (*J. Barrett*).

E Mus. H. B. Tristram.

a, ♂, *b*, ♂, *c*, ♂, *d*, ♀. Gardaia, Algeria, December 1856. *e*, ♂. Guinara, December 13th, 1854. *f*, ♀. Engedi, January 23rd, 1864 (*H. B. T.*). *g*, ♂. Ras Feshkhab, January 15th, 1864 (*H. B. T.*). *h*, ♀. Jebel Usdum, January 26th, 1864 (*H. B. T.*). *i*, ♀.

E Mus. Howard Saunders.

a. Egypt, 1868 (*Rogers*).

E Mus. G. E. Shelley.

a, ♀, *b*, ♀, *c*, ♀, *d*, ♀, *e*, ♂ *juv.*, *f*, *pullus*. Nubia, April 1870 (*G. E. Shelley*). *g*, ♂. Assouan, Egypt, 1868 (*G. E. S.*). *h*, ♂. Egypt, April 1870 (*G. E. S.*).

E Mus. Berol.

a, b, c, d, e, f. Egypt (*Hempr. & Ehr.*). *g, h, i*. Nubia (*H. & Ehr.*). *j*. Tor (*H. & Ehr.*). *k, l, m, n*. Arabia (*H. & Ehr.*). *o*. Constantine, Algeria (*Burvy*).



BLACK CHAT.
SAXICOLA LEUCURA
13*

SAXICOLA LEUCURA.

(BLACK CHAT.)

- White-tailed Thrush*, Lath. Syn. iii. p. 49, "Gibraltar" (1783).
Turdus leucurus, Gm. Syst. Nat. i. p. 820 (1788, ex Lath.).
Turdus leucurus, Lath. Ind. Orn. i. p. 344. no. 58 (1790, ex Lath.).
Œnanthe leucura, Vieill. Nouv. Dict. xxi. p. 422, "Spain, Southern France" (1818).
Saxicola cachinnans, Temm. Man. d'Orn. i. p. 236, "Southern Europe" (1820).
Vitiflora leucura (Gm.), Bp. Comp. List B. of Eur. & Am. p. 16, "Southern Europe" (1838).
Saxicola leucura (Gm.), Keys. & Blas. Wirbelth. p. 60, "Spain, Sicily, coasts of Mediterranean, Egypt, and Arabia" (1840, partim).
Saxicola leucurus (Gm.), Bp. Cat. Metod. Uccelli Eur. "S. Europe, Asia, Africa" (1842).
Dromolæa leucura (Gm.), Bp. Consp. G. Av. i. p. 303, "S. Eur., Asia, Africa" (1850, partim).
Vitiflora leucuros, C. L. Brehm, Vogelf. p. 225, "N.E. Afr. and S. Europe" (1855, partim).
Dromolæa leucura (Gm.), A. E. Brehm, J. f. Orn. 1858, p. 55, "Spain;" Tristram, Ibis, 1859. p. 296, "N.W. Africa."

Motteux noir, *Traquet noir*, *Traquet rieur*, French; *Sacristan*, *Ruiblanco*, *Culiblanco*, *Papuda*, *Pajaro negro*, Spanish; *Culbianco abbrunato*, *Mataccinu niuru*, Italian; *Bou Haoud*, Arabic.

Figuræ notabiles.

Werner, Atlas, *Insectivores*, pl. 63; Roux, Orn. Prov. pl. 197; Bree, B. of Eur. pl. to p. 118; Gould, B. of Eur. pl. 88.

♂ *ad.* niger: remigibus sordidioribus, brunnescenti-nigris: supracaudalibus albis: rectricibus albis, centralibus ad basin albis, ad apicem nigris, reliquis nigro apicatis: rostro et pedibus nigris: iride brunneâ.

♀ *ad.* mari dissimilis, nigricanti-brunnea nec nigra: caudâ ut in mari, sed sordidiore.

Adult Male (Guelt el Stel, Algeria, 18th March). Entire body, excepting the upper tail-coverts, black, not quite so jet-black as *S. leucopyga*; wings brownish black; upper tail-coverts pure white; tail white, the central feathers with the terminal half black, the remainder broadly tipped with black, some having a scarcely visible whitish tip to the black; under tail-coverts pure white; beak and legs black; iris brown. Total length 6·5 inches, culmen 0·95, wing 3·7, tail 3·0, tarsus 1·07. The average size of six specimens is:—culmen, 0·91, wing 3·66, tail 2·92, tarsus 1·08.

Female (Boghar, Algeria). Much duller in colour than the male, being dull blackish brown instead of black.

Nestling (Sierra Nevada, 26th May). Dull black; feathers on the vent and under tail-coverts tipped with dirty white; upper tail-coverts pure white; tail black, narrowly tipped with white. Compared with

the nestling of *S. leucopygia* it is easily distinguishable by having the tail entirely black, except at the tip, and by lacking the conspicuous white on the lower part of the abdomen and under tail-coverts; and it is in general much duller in colour than that bird.

THE Black Chat inhabits Southern Europe and North-western Africa, being in India replaced by a smaller but tolerably closely allied species, *Saxicola opistholeuca*. It is included in Professor Barboza du Bocage's list of birds occurring in Portugal; but he does not state if it is common or not. In Spain it is common in suitable localities; Lord Lilford obtained it near Aranjuez; and Major Irby informs me that "it is migratory in the vicinity of Gibraltar, arriving early in March; some few pairs are resident on the Rock; and there is no increase to their numbers in the spring. Often they nest in clefts of the rocks so deep as to be quite safe from man." Mr. Howard Saunders writes (*Ibis*, 1871, p. 211) that in Southern Spain it is "abundant in rocky places, arriving earlier than the *S. aurita* and *S. stapazina*, and breeding in April. Its eggs, of the palest blue or sea-green, distinctly zoned with reddish spots, are, when fresh, the most beautiful of the family." Dr. Brehm, whose notes on the breeding-habits of this bird are given below, refers to it as a resident species in Spain, where it inhabits the desolate mountains, and affects those where the rocks are dark in colour and assimilate to its sombre plumage.

Jaubert and Barthélemy-Lapommeraye record it from the south of France; and Dr. von Müller (*J. f. O.* 1856, p. 225) writes that it "inhabits the rocky mountains of Provence along the coast, is found here all the year round, but is more numerous in March and April by the accession of new arrivals." It occurs in Italy, but is not so common there as in Spain. Savi observed it near Genoa, but has not obtained it in Tuscany; and, according to Count Salvadori, it is in general rather rare and local in Italy. This latter gentleman writes (*J. f. O.* 1865, p. 135) that there are three specimens in the University Museum, obtained in Sardinia, and that during his residence at Cagliari a specimen was caught on the rocky hill of S. Avendrace, near that town, where it is common, and he thinks that it breeds there. Cara also records it as not uncommon in Sardinia. Professor Doderlein states that it is rare in the immediate neighbourhood of Palermo, but is common in the arid and mountainous portions of Sicily, arriving in spring, nesting, and departing in autumn. Both Von der Mühle and Lindermayer record it as very rare and exceedingly shy in Greece, the former only succeeding in obtaining one specimen after infinite trouble, and the latter states that Erhardt met with it on the islands. Professor von Nordmann states that he obtained a bird of this species in the Crimea; and Canon Tristram speaks with doubt (*Ibis*, 1859, p. 59) of having seen it near Bethlehem; but I think it scarcely probable that either gentleman really refers to the present species, but possibly to *S. leucopyga*, or to one of the other black-and-white Chats. In North-eastern Africa the present species is replaced by *S. leucopyga*; but it occurs in Algeria, where, according to Loche, it "is never found on the coast, though common in the mountainous districts, especially on the borders of the desert." Mr. O. Salvin found it most numerous in the district of Djendeli; and Canon Tristram writes (*Ibis*, 1859, p. 296) that "wherever there are savage ravines, bare cliffs reflecting a burning glare on the hungry valley, rent chasms fearful in the unspeakable stillness which pervades the transparent atmosphere around, gorges which strike the intruder with awe, as though life, vegetable or animal, had never dared to intrude there before, even here may a pair of Rock-

Chats of some species or other be detected. If a snap-shot has been successful the victim generally contrives to escape into some deep fissure to die; and frequently it is impossible to recover the spoils. *Dromolæa leucura* is found only in the north of the desert. El Aghouat may be considered its southern limit; and it alone of the class comes up to the foot of the Atlas, on the southern slopes of which it is tolerably abundant from Morocco to Tunis." As previously stated, the present species does not appear to occur in Asia. Dr. Radde figures and describes a Chat under the name of *Saxicola leucura* (Reis. im Süd. v. O. Sib. ii. p. 247, taf. ix. fig. 3), which is certainly not that species, and appears to me to be the immature bird of *S. leucomela*, Pall.

In its habits the Black Chat has much in common with *S. leucopyga*. It is to be met with amongst the dreary, desolate rocky districts, which it enlivens by its neat figure and lively, active movements. Dr. A. E. Brehm, well known as a good field-naturalist and excellent observer, has published (J. f. O. 1858, pp. 56–62) some excellent notes on its habits, from which I extract the following particulars:—"The Black Chat is a true mountain-bird, which never descends into the valleys, and is found in most parts of Spain. We first observed it at Montserrat in Catalonia, afterwards in Sativa and Enguerra (Province of Valencia), commoner in Murcia, in the mountains surrounding the celebrated Vega, and in the Sierra Nevada, at about 5000 feet altitude. But it is possible that it moves higher up into the mountains in summer; for, according to our collectors, it occurs in winter in Murcia, more frequently near the base of the mountains than the top, as is the case in summer. According to Graells it is tolerably common in the Sierra Guadarrama; and we also saw some specimens, in the Museum at Madrid, which had been killed near there. It does not appear to inhabit Galicia; at least neither Rios-Naceyro nor our friend Lopez Seoane mentions it. It prefers the wildest and most rugged mountains; and the blacker the stones are, the more numerous is this bird; we have, however, seen it also amongst the light-coloured limestone rocks. It is a very cautious, shy, and lively bird, inhabiting the most dreary mountains. The male often behaves in a very odd manner: it either dances about on a precipice or a stone, or trips up the precipice, spreading its tail and wings like the Blackcock, nods its head, turns sharp round, rises singing into the air like a Tree-Pipit, and then gradually sinks with outspread wings to the ground, where it finishes the last strophes of its song in the neighbourhood of the female bird, which quite silently watches the antics of her mate. In all its comical postures it knows how to show its beautiful white tail to the best advantage. If there are any trees or prickly-pear bushes in the mountains, it will also repose on them during the intervals of its dance and song; otherwise it selects the most prominent positions for its resting-places, if they can be thus called, as this bird is always dancing and singing. Without any signs of fear it comes down from these mountains to the walls of the towns, or to the farms in the mountains, knowing that at all events it is quite safe there.

"Its behaviour during the season of nidification is well worth watching. It commences with the building of its nest very late, about the middle or end of April or even as late as the beginning of May. It can easily find suitable localities where it can place its nest; for everywhere in the high, steep, rocky precipices a hole is to be found which is not taken in possession by a Rock-Sparrow. The nest is constructed for a numerous progeny, is large, and is built of grass and roots, put together very closely, and in the inside lined with hair. Four or five eggs are usually deposited; but not unfrequently as many as six or seven are found in a nest.

in the beginning of July 1857, in the Sierra de los Anches, near Murcia. It was placed in a large hole covered by another stone like a roof. The place was very carefully chosen, as this part of the mountain was seldom visited by men; only the bird never thought that the hole could so very easily be reached. I found in it five young unfledged birds, and was not long in uncertainty as to what species they were; for I had not finished examining the nest when both parents appeared with food. Never, not even out of the best hiding-place, could I have observed these lovely birds to such advantage as now. Both these birds, otherwise so shy, seemed to forget their usual caution, as the female was within fifteen paces of me and the male rather further off. The female flew anxiously from one rock-pinnacle to the other, whilst the male was sitting on the same place and singing as if begging me not to touch but to leave its nest in peace, and tripping and dancing all the time. The scene became quite touching—on the one side the mother flying and fluttering round me, on the other hand the male not knowing what to do in its anxiety to entice away the dangerous enemy. I could not find in my heart to shoot the poor bird, and left the nest, whilst the male seemed to thank me with a joyful song. Afterwards I saw both parents teaching the young to fly, the parents flying before the happy company from stone to stone, from rock to rock; for the young ones feel themselves quite comfortable amongst the stones from the beginning. If one of the old birds utters an alarm-note the whole brood is in a moment hidden amongst the stones and clefts; but the next moment, when the enemy is out of sight, the whole family reappears on the tops of the rocks in reply to the cry of one of their parents; and when an insect is caught, all the young ones may be seen running and crying to get it, and even their short wings are used to accelerate their speed; but again the black male is the fastest and has got it. Now the head of the enemy is again perceived, and an alarm-note from the male bird sends all the young to their hiding-places. The whole brood remains thus under the protection of their parents until they have moulted; and then they scatter, as each has found a companion. July, August, and September are the months when they moult; at the end of October and beginning of November the single pairs are already together, although they still affect the company of others. In January they already begin to sing; in February the autumn song is heard; it is very like that of the Blue Thrush, but not so loud and so clear, and generally finishes with a peculiar churring sound, resembling that of the Black Redstart."

I do not possess the egg of this Chat; but my friend Mr. Howard Saunders has lent to me one taken by himself at Alora, in Southern Spain, on the 9th of May, 1868. This egg is very pale light blue, with the faintest greenish tinge, has a zone of pale reddish spots and blotches round the larger end, and a few small, indistinct red dots scattered over the surface of the shell. In size it measures $\frac{3.6}{4.0}$ by $\frac{2.7}{4.0}$. Canon Tristram (*Ibis*, 1859, p. 297) describes the egg as "somewhat larger than those of the Wheatear, of a rich deep greenish blue, covered towards the larger end with rust-red blotches and spots," which does not agree with the specimens I have seen from Spain.

The adult specimens figured are in my own collection and in that of Canon Tristram, the nestling being one belonging to Mr. Howard Saunders.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a, ♂ *ad.* Guelt el Stel, Algeria, March 18th, 1870 (*J. H. Gurney, jun.*). *b*, ♂. Algeria (*Fairmaire*).

E Mus. H. B. Tristram.

a, ♂. Algeria. *b*, ♂. Bokhari, Algeria, November 1st, 1856. *c*, ♀. Bougsoun, Algeria, November 1st, 1856.
d, ♀. Boghar, Algeria, October 30th, 1856 (*H. B. T.*).

E Mus. Howard Saunders.

a, *b*, ♂, ♀ *ad.* Near Madrid, May. *c*, *d*, ♂, ♀, *e*, ♂, *f*, ♀. Granada, June. *g*, *h*, *i*, *pulli*. Granada, June.
j, ♀. Granada, August. *k*, ♂. Malaga, April.

Genus PRATINCOLA.

Rubetra apud Brisson, Orn. iii. p. 440 (1760).

Motacilla apud Linnæus, Syst. Nat. i. p. 332 (1766).

Sylvia apud Scop. Ann. I. Hist. Nat. p. 159 (1769).

Saxicola apud Bechstein, Orn. Taschenb. i. p. 218 (1802).

Pratincola, Koch, Baier. Zool. p. 191 (1816).

Curruca apud Leach, Syst. Cat. M. & B. Brit. Mus. p. 24 (1816).

Ænanthe apud Vieillot, Nouv. Dict. xxi. p. 427 (1818).

Fruticicola apud Macgillivray, Hist. Brit. B. ii. p. 273 (1839).

THOUGH very closely allied to the *Saxicolæ*, I have deemed it expedient to keep this small group distinct from that genus. The genus embraces about fifteen species, which inhabit the Palæarctic, Oriental, and Ethiopian Regions; but only three occur within the limits of the Western Palæarctic Region. Like the *Saxicolæ* these birds are insectivorous; but they are better songsters than the true Chats. They build tolerably well-constructed nests on or near the ground, and lay bluish eggs, either unspotted or slightly spotted with reddish dots.

Saxicola rubetra, which I consider to be the type of the present genus, is a shorter, stouter-built bird than any of the *Saxicolæ*. It has the bill short, straight, and rather slender, depressed at the base, compressed towards the end; mouth rather wide; nostrils small, elliptical, direct, pervious, in the fore part of the large anteriorly bare nasal membrane; legs slender; tarsus compressed, covered anteriorly with a long plate and four anterior scutellæ; toes rather short, slender, the third and fourth united as far as the second joint of the latter; bristles of the gape rather large; wings short, broad, convex, having eighteen quills, the first very small, the fourth longest, the third and fifth scarcely shorter; tail short, nearly even.



WHINCHAT.
SAXICOLA RUBETRA



WHINCHAT
♀ and young.
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PRATINCOLA RUBETRA.

(WHIN-CHAT.)

- Rubetra senegalensis*, Brisson, Ornith. iii. p. 440. no. 29, pl. xx. f. 3, "Senegal" (1760).
Motacilla rubetra, Linn. Syst. Nat. i. p. 332. no. 16 (1766).
Motacilla senegalensis, Linn. tom. cit. p. 333. no. 22 (1766, ex Brisson).
Sylvia rubetra (Linn.), Scopoli, An. i. Hist. Nat. p. 159. no. 237 (1769).
Traquet du Sénégal, D'Aubenton, Pl. Enl. 583. f. 1 (1778).
Le Traquet ou Tarier du Sénégal, Buffon, Hist. Nat. Ois. v. p. 228, "Senegal" (1778).
Motacilla fervida, Gm. S. N. i. p. 968. no. 98 (1788, ex Buffon).
Sylvia rubetra (Linn.), Latham, Ind. Ornith. ii. p. 525. no. 58 (1790).
Saxicola rubetra (Linn.), Bechst. Orn. Taschenb. i. p. 218 (1802).
Pratincola rubetra (Linn.), Koch, Baier. Zool. p. 191 (1816).
Curruca rubetra (Linn.), Leach, Syst. Cat. Brit. Mus. p. 24 (1816).
Enanthe rubetra (Linn.), Vieillot, Nouv. Dict. d'Hist. Nat. xxi. p. 427 (1818).
Pratincola rubetra (Linn.), Kaup, Entwicklungs-Gesch. europ. Thierw. pp. 114, 191 (1829).
Saxicola pratorum, C. L. Brehm, Isis, 1828, p. 1282; Vög. Deutschlands, p. 407, "Central Germany" (1831).
Saxicola septentrionalis, C. L. Brehm, loc. cit. (1828); op. cit. p. 408 (1831).
Saxicola crampes, C. L. Brehm, loc. cit. (1828); op. cit. p. 409 (1831).
 "Saxicola rubecula, Bechst.," Bp. (*lapsu cal.*) Faun. Ital. *Uccelli*, Introduzione, p. 8 (1832-40).
Fruticicola rubetra (Linn.), Macgillivray, Hist. Brit. Birds, ii. p. 273. fig. 161 (1839).
Rubetra major, Brisson, G. R. Gray, Gen. of Birds, p. 22 (1840).
Pratincola rubetra (Linn.), Hartlaub, Ornith. Westafricas, p. 67. no. 200, "Senegal" (1857).
Pratincola fervida (Gm.), Hartlaub, op. cit. p. 67. no. 201 (1857).
Pratincola senegalensis (Briss.), Hartlaub, op. cit. p. 68. no. 203 (1857).
Pratincola rubetra (Linn.), v. Heuglin, Ornith. N.O.-Afrika's, p. 338. no. 284 (1869).

(The above by Lord Walden.)

Whin-Chat, *Furze-Chat*, English; *Tarier ordinaire*, French; *La Rubetra*, Spanish (fide Machado); *Cartaxo*, Portuguese; *Stiaccino*, Italian; *Cacasipali*, Sicilian; *Buciak-tal-Kudi*, Maltese; *Wiesenschmätzer*, *braunkehliger Steinschmätzer*, German; *Paapje*, Dutch; *Bruunstrubet-Digesmutte*, *Bynkefugl*, *Rædbrystet Squætte*, Danish; *Buskskvæt*, Norwegian; *Buskäräla*, *Busksqvätta*, Swedish; *Pensastasku*, Finnish; *Poklaskwa bialobrwista*, Polish; *Tschekkan lugowoi*, Russian.

Figuræ notabiles.

D'Aubenton, Pl. Enl. 583. fig. 1, and 678. fig. 2; Brisson, *l. c.*; Werner, Atlas, *Insectivores*, pl. 73; Kjærb. Orn. Dan. taf. xviii.; Fritsch, Vög. Eur. pl. 25. figs. 2, 3; Sundevall, Sv. Fogl. pl. xi. figs. 3, 4; Gould, B. of Eur. pl. 93; id. B. of G. Brit. ii. pl. 46; Naumann,

Vög. Deutschl. taf. 89. figs. 3, 4; Schlegel, Vog. Nederl. pl. 91; Bettoni, Ucc. Lomb. tav. 4; Roux, Orn. Prov. pl. 203.

♂ *ad. æst.* capite suprâ, dorso cum scapularibus nigricanti-brunneis, plumis omnibus ochrascente ferrugineo marginatis: uropygio rufescenti-ochraceo, plumis medialiter nigricante brunneo striatis: supracaudalibus ochrascenti-albidis, nigricante notatis: caudâ ad basin albâ, ad apicem nigricanti-brunneâ: remigibus saturatè brunneis, pallidiore marginatis: tectricibus alarum majoribus nigricanti-brunneis, intimis cum tectricibus inferioribus et alulâ spuriâ ad basin purè albis: facie et collo laterali nigricanti-brunneis, vix fulvido notatis: lineâ a naribus supra oculos ad nucham, gulâ et lineâ ad latera juguli albis: gutture, pectore et hypochondriis pallidè rufescentibus: abdomine albedo: subcaudalibus ochraceis: rostro et pedibus nigricantibus: iride brunneâ.

♀ *ad.* suprâ nigricanti-brunnea, plumis omnibus saturatè ochraceo marginatis: subtùs pallidè ochrascenti-albida: gulâ et abdomine centrali pallidioribus: pectore laterali brunnescente guttato: pectore et hypochondriis vix rufescente lavatis: caudâ et alis saturatè brunneis, pallidiore marginatis: tectricibus alarum majoribus albedo apicatis.

♂ *ad. hiem.* fœminæ similis, sed dorsi plumis conspicuè rufescente ochraceo marginatis: alis ut in ♂ *æst.*: corpore subtùs clariore quam in fœminâ.

Pullus. suprâ nigricanti-brunneus, ochraceo striatus: remigibus et rectricibus nigricanti-brunneis, his rufescente apicatis, primariis externis in pogonio externo cervino marginatis, internis, secundariis et tectricibus alarum conspicuè rufescente marginatis et apicatis: corpore subtùs ochrascenti-albido: pectore brunneo notato.

Adult Male in spring (Cookham, 26th April, 1869). Crown, nape, back, and scapulars blackish brown, the feathers on the crown narrowly margined, and those on the back broadly edged with light ochre-yellow, with a reddish tinge; rump rufescent ochre, each feather having a dark brown central line; upper tail-coverts dull yellowish white, with a large central blackish brown spot towards the tip; tail white on the basal half, the remaining portion being dull blackish brown, each feather having a narrow edge of lighter brown; quills dark brown, with lighter margins to the outer webs; larger wing-coverts blackish brown, except the innermost, which, with the inner smaller coverts and primary coverts at the base, are pure white, forming a conspicuous double alar patch; sides of the face and neck blackish brown, slightly marked with dull fulvous; a broad stripe over the eye to the nape, the chin and a line extending along the sides of the neck, and bordering the dark brown portion, pure white; throat, breast, and flanks pale rufous, palest on the flanks; abdomen dull white; under tail-coverts pale ochre; bill and legs blackish; iris brown. Total length 4.75 inches, culmen 0.58, wing 2.9, tail 1.95, tarsus 0.92.

Adult Female (Skara, Sweden, 25th May). Back and crown similar to the adult male, but duller, the dark centres to the feathers being larger, sides of the head dull ochre, marked with dark brown, superciliary stripe dirty yellowish white; wings much duller than in the male, the white being almost absent, only a few of the larger wing-coverts being tipped with dirty white; underparts dull yellowish white, palest on the chin and the centre of the abdomen; breast and flanks washed with pale rufous ochre; on each side of the fore part of the breast a few dull brownish spots.

Male in autumn (Cookham, September). Resembles the adult female; but the feathers on the upper parts have broader rufous edges, and the superciliary stripe is rather more distinct; the white on the wing is also as distinct as in the male above described in spring plumage, and the underparts are rather brighter than in the female.

Nestling (Belgium). Head, neck, and back blackish brown, striped with sandy yellow, each feather having a narrow light centre; wings and tail blackish brown, the outer primaries margined on the outer web with rufous buff, the inner primaries, secondaries, and short tail-feathers broadly edged and tipped with rufous: underparts dull yellowish white, marked on the breast with dull brown.

Obs. In order to show the variation in size of specimens from various localities, I give below a table of measurements. As a rule examples from Southern Europe and Northern Africa are somewhat brighter in colour than those from Northern Europe. I also give the measurements of the three specimens of *Pratincola rubetroides* from the collection of Lord Walden, as I look on this as a perfectly good and distinct species.

| | | Calmen. inch. | Wing. inches. | Tail. inches. | Tarsus. inch. |
|-----------------------|--------------------|------------------|------------------|------------------|------------------|
| <i>P. rubetra</i> | England. | 0.57-0.65 | 2.85-2.95 | 1.8-2.1 | 0.83-0.92 |
| " | Sweden. | 0.55-0.65 | 2.7-2.95 | 1.8-2.0 | 0.85-0.92 |
| " | Italy. | 0.55 — | 2.8 — | 1.8 — | 0.8 — |
| " | Greece. | 0.62 — | 2.9 — | 1.9 — | 0.9 — |
| " | Asia Minor. | 0.63 — | 2.9 — | 2.0 — | 0.9 — |
| " | Nubia. | 0.61 — | 2.85 — | 2.05 — | 0.85 — |
| " | Algeria. | 0.6 — | 2.9 — | 1.9 — | 0.9 — |
| " | Accra, W. Africa. | 0.65 — | 2.91 — | 1.95 — | 0.95 — |
| " | Cape-Coast Castle. | 0.63 — | 3.0 — | 1.98 — | 0.90 — |
| <i>P. rubetroides</i> | Sirsa. | 0.6 — | 2.95 — | 2.25 — | 1.0 — |
| " | Hurriona, ♂. | 0.6 — | 3.0 — | 2.15 — | 1.0 — |
| " | Umballah, ♀. | 0.65 — | 3.05 — | 2.35 — | 1.1 — |

THE present species is met with throughout Europe, extending its range further north than the Stone-Chat. In Asia it is found in Persia, but in India is replaced by a closely allied species, *P. rubetroides*. Unlike the Stone-Chat it is a migrant, leaving in the late autumn for Southern Europe and Northern Africa, and is met with during the winter as far south in Africa as Fantee.

Throughout Great Britain the Whin-Chat is found affecting the same haunts as its relative the Stone-Chat, but scarcely so common as that species. In Scotland it ranges, Mr. R. Gray writes (B. of W. of Scotl. p. 87), from the border counties to Caithness, though in many districts it is altogether absent. Macgillivray records it as found in the Outer Hebrides; and it has been met with in Orkney. It has, however, not been met with in Shetland. In Ireland it is found in almost every county, but, as in England, it is very local, and is also said to be rare. In Norfolk, Mr. H. Stevenson informs me, as the marshes in the "broad"-districts become consolidated by drainage and cropped with thistles, the Whin-Chat extends its range, and is now found on the very borders of the swamps. In our midland and southern counties the Whin-Chat is found on most of the large commons, though not everywhere, being, as in Scotland, not so generally distributed as the Stone-Chat. In Somersetshire, Mr. Cecil Smith informs me, it is by no means common, being only occasionally met with during the summer season. It does not appear to go so far north as Iceland; and though said by Linnæus to occur in Spitzbergen, subsequent travellers do not confirm this statement. Captain Feilden informs me that it has once been met with on the Færoes, a specimen having been observed by Mr. H. C. Müller near Thorshavn in December 1852. Throughout Northern Europe the present species has a much more northern

range than the Stone-Chat; for in Scandinavia it is to be met with in the Arctic Circle, during the breeding-season more common even in the north than in the southern districts of the peninsula. Mr. R. Collett informs me that he met with it in Norway, in June 1872, in the valley of the Maalselv, near Tromsö, in $69\frac{1}{2}^{\circ}$ N. lat., where it was tolerably common. I have observed it in various parts of Sweden, in which country Professor Sundevall records it (Sv. Fogl. p. 55) as "common up into Lapland, though more numerous in the north than in the south, not, however, passing above the conifer region." In Finland it likewise occurs up into the Arctic circle. Mr. Meves records it as common in Southern Russia; and it is, Mr. Sabanäeff informs me, common in Northern and Central Russia, as also in the portions of the Ural visited by him. Mr. Taczanowski likewise remarks, in writing to me respecting the ornithology of Poland, that the present species is common there. To the westward of that country, however, in North-eastern Germany, it is by no means so common. Meyer refers to it as occurring in Livonia, where it is a migrant.

Borggreve states that Von Negelein found it breeding in Oldenburg. Between the Elbe and the Weser both this species and *P. rubicola* are found; but on the right side of the Elbe it alone is found. In the western portion of North Germany it is common; and Dr. E. Rey records it as found breeding in Saxony. In Southern Germany it is tolerably common. Seidensacher states that it occurs in Styria only during migration; and Dr. A. Fritsch (J. f. O. 1871, p. 199) records it as common in Bohemia, especially near Prague. Count Casimir Wodzicki (J. f. O. 1853, p. 436) states that, though numerous in the lowlands, it is rare in the Carpathian Mountains, and but few breed there. Returning northward, again, we find it tolerably common in Denmark, Holland, and Belgium during the summer season, arriving late in April and leaving in October; and Degland and Gerbe state the same with regard to its occurrence in the north of France; but they record its arrival as taking place as early as March. It occurs in Portugal, but appears to be rare, as Dr. E. Rey states (J. f. O. 1872, p. 147) that when at Algarve he only saw a single pair. Mr. Howard Saunders informs me that in Spain it appears to be a mere visitor on migration, and the east coast from Valencia upwards is the only part where he found it at all abundant even then; indeed, in the south-west he does not recollect it at all, although the Stone-Chat is very common there. He has a specimen from Tangiers. Major Irby also writes to me, "the Whin-Chat is only observed in the vicinity of Gibraltar on passage, and is then seen in great numbers; my earliest date of seeing them was on the 7th of April; on the 12th and on the 20th many hundreds passed; they return during September. I never detected any remaining to nest." Mr. A. von Homeyer (J. f. O. 1862, p. 276) met with it numerous during the season of migration, between the 15th and the 30th of April, on the Balearic Islands, but says that only a few remain there to breed. Passing eastward, again, we find it in Southern France and in Savoy, in which latter country it is, Bailly writes, one of the most numerous of the Chats, arriving about the 25th or the 30th of March, and leaving about the middle of September, some few occasionally remaining till about the 10th of October. Bettoni records it as breeding in Lombardy; but Savi states that in Tuscany it occurs only at the two seasons of migration, and does not breed there. Count Salvadori says that it remains in Italy in the autumn until October; and Professor Doderlein writes that, though as a rule a migrant in Sicily, a few remain to breed in the more elevated portions of the island. Mr. C. A. Wright records it from

Malta, where, he writes (Ibis, 1864, p. 65), "it arrives at the same time as the other *Saxicola*. In April and May, and again in September, it may be met with almost daily in the fields and open places." Lord Lilford met with it in the Ionian Islands, where it is, he states, common during the summer; and Mr. H. Seebohm informs me that it occurs in Greece merely during the seasons of migration, only remaining for a week or two in the spring and autumn. Linder-mayer states, however (Vög. Gr. p. 109), that it is a resident in Greece, being found in the winter in the southern provinces, and in the summer in the mountains of Northern Greece, where a few are to be met with in the breeding-season. Mr. Robson has obtained it in Turkey. Von Nordmann records it as common during the two seasons of migration in Southern Russia; and Ménétries includes it in his list of the birds found in the Caucasus. Canon Tristram met with it in Palestine, where it occurs only during migration, not remaining to breed, and doubtless passes through that country on its way to and from Northern Africa, where it is found during the winter season. Captain Shelley met with it in Egypt, where, he writes (B. of E. p. 81), it "is not so abundant as the Stone-Chat, but is more evenly distributed throughout the country. According to Von Heuglin (Orn. N.O. Afr. p. 338) it comes to Egypt in August, and is certainly found in the late spring, for I have shot it in Nubia on the 11th of April." Mr. Blanford met with it in Abyssinia, where, he states, he "shot a young bird at Rairo, in Habab, about the middle of August, at an elevation of 3000 feet above the sea," which appears a very early date if it was a bird hatched that season on European soil. In Western Africa it has been met with as far south as Fantee. In Algeria it is recorded by Canon Tristram as common during the winter in the oases; and Major Loche states that, though common in Northern Algeria, it is rare in the southern portion, and does not, he thinks, ever reach the Sahara. Mr. Chambers-Hodgetts met with it in Tripoli; and Mr. C. F. Tyrwhitt Drake records two as having been shot at Tetuan. Several authors have recorded it from Senegal. Messrs. Shelley and Buckley state (Ibis, 1872, p. 287) that it is extremely common on the Gold Coast; and Mr. R. B. Sharpe writes (Ibis, 1872, p. 69), in his paper on the birds of the Fantee country, "Mr. Ussher obtained one specimen of our common Whin-Chat at Accra. I have it in my collection from the Gambia." I have also received a specimen from Captain Shelley marked as having been obtained in the Fantee country.

To the eastward the present species is found, as above stated, in the Caucasus; and De Filippi records it as occurring in Persia; but Mr. Blanford informs me that he never observed it during his recent visit to that country. Messrs. Dickson and Ross also record (P. Z. S. 1839, p. 120) a few as seen in April at Erzeroom; and again (P. Z. S. 1844, p. 65) they state that a male was shot in November, and a female in May 1843 on the Jebel Mountains. In India it is replaced by a very closely allied race, *Pratincola rubetroides*, Jameson (Jerdon, B. of I. App. p. 872), which, judging from the three specimens I have examined, seems to me to be distinct from our bird, being larger in size, more isabelline in colour, and having the white on the tail extending nearly to the tip. Dr. Jerdon records this species as having been met with by Mr. W. Jameson on the Salt range of the Punjab, whence Mr. Hume has also obtained it. In Siberia the Whin-Chat does not occur; nor do I find it recorded from China or Japan.

In its habits the Whin-Chat very closely resembles the Stone-Chat, and like that species

frequents open commons and heaths, pastures, and other open localities, very frequently affecting hilly portions of the country. It is restless and active, flits from bush to bush, generally perching on the topmost twig, where it sits, moving its body and jerking its tail, every now and then uttering its sharp short note, from which its name of "Chat" is derived. Macgillivray, writing on its song and habits, says that "it is when perched on a twig, and often when fluttering in the air over it, that it performs its short, modulated, cheerful song, which resembles that of the White-rumped Stone-Chat, but is inferior to it in mellowness and compass. In this respect the Bush-Chats resemble the White-throated Warbler; and in fact, both in form and habits, a gradation may easily be traced through the different species of the extensive family of Cantatores. The Whin Bush-Chat is generally shy, so that it is not easily shot, unless in the vicinity of its nest, from which it endeavours in various ways to decoy an intruder. If wounded it hides among the bushes, and is very difficult to be traced.

"When one approaches the nest they evince great anxiety; but at first keep at some distance, perched on the top twigs of the bushes, and at short intervals emit a mellow plaintive note, followed by several short notes resembling the ticking of a clock, or that produced by striking two pebbles together, and at the same time jerk out their tail and flap their wings. When the plaintive note alone is uttered, they do not move the body or wings; but for every two ticks there is a jerk of the tail, accompanied by a slight elevation of the wings. The notes may be represented by the syllables, *peep, tick, tick, tick, tick*. Sometimes a single tick only is emitted, frequently four or five, rarely six. If you go nearer the nest they advance, redouble their cries, flit about from bush to bush, and sometimes hover in a fluttering manner at the height of a few feet."

The Whin-Chat feeds chiefly on insects of various sorts, caterpillars, small worms, and, according to some authors, on berries. Macgillivray says that he never found any thing but the remains of coleopterous insects in the stomachs of those he examined.

With us in England it breeds twice in the season, the first brood being hatched late in May, the second in August. The nest is usually placed on the ground, carefully concealed amongst bushes or grass, and is constructed of grass, bents, and fibrous roots, sometimes intermixed with a little moss, and lined with fine bents and, according to Macgillivray, hairs of various kinds. The nest is rather large and bulky. The eggs, from four to six in number, are pale dull bluish green, marked with small indistinct reddish brown spots which are often collected round the larger end, or else almost unspotted greenish blue. One clutch in my collection are very clear in colour, almost as blue as those of the Hedge-Sparrow. In size they vary from $\frac{2.7}{4.0}$ by $\frac{2.2}{4.0}$ to $\frac{3.0}{4.0}$ by $\frac{2.2}{4.0}$ inch. Mr. Collett informs me that, curiously enough, in Norway this species usually lays seven, and but rarely so few as six eggs—which is the more noteworthy, as most species deposit fewer eggs in the far northern portions of Europe than they do in the central and southern countries.

The specimens figured are, on the one Plate the adult male in summer and in winter plumage, and on the other the adult female with the nestling, these being the birds described.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a, ♂. Highgate, May 1869 (*Davy*). *b*, ♂. Highgate, June 1869 (*Davy*). *c, d, e, f, g*, ♂. Highgate, August 1869 (*Davy*). *h, i, j, k*, ♂. Hampstead, April 1869 (*Davy*). *l, m, n, o, p, q, r*. Hampstead, May 1869 (*Davy*). *s*, ♂. Hampstead, September 1869 (*Davy*). *t*. Hampstead, November 1869 (*Davy*). *u, x*. Hampstead, September 1870 (*Davy*). *y*. Near London, May 20th, 1870. *z*, ♂. Croydon, May 1869 (*Davy*). *aa*, ♂. Cookham, Berks, September 5th, 1868 (*R. B. S.*). *bb*, ♂. Cookham, April 26th, 1869 (*J. Ford*). *cc*. Pagham, Sussex, July 1870. *dd*, ♀. Pagham, May 1872 (*R. B. S.*). *ee, ff*, ♂, *gg*, ♀. Stockholm, September 4th, 1845 (*W. Meves*). *hh*, ♀. Stockholm, September 4th, 1845 (*W. Meves*). *ii*, ♂. Uddevalla, Sweden, June 7th, 1871. *jj*, ♀. Skara, Sweden, May 25th, 1870 (*Meves*). *kk*, ♂. Macedonia, Olympus, April 28th, 1870 (*Dr. Krüper*). *ll*, ♂. Italy. *mm*, ♂. Asia Minor, October 4th, 1865 (*T. Robson*). *nn, pullus*. Belgium. *oo*, ♂. Accra, West Africa, April 1872 (*Smith*). *pp*, ♂. Fantee, Cape-Coast Castle, March 9th, 1872 (*G. E. Shelley*).

E Mus. H. B. Tristram.

a, ♂. Algeria, April 25th, 1856. *b*, ♀. Near Mount Tabor, April 1864.



STONECHAT.
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STONECHAT
 ♀ and young
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PRATINCOLA RUBICOLA.

(STONE-CHAT.)

- Motacilla rubicola*, Linn. S. N. i. p. 332. no. 17 (1766).
Sylvia muscipeta, Scopoli, An. I. Hist. Nat. p. 159. no. 236 (1769).
Tschecantschiki, Lepechin, Novi Comment. Ac. Imp. Sc. Petrop. xv. p. 487, pl. 25. fig. 3 (1771); id. Tageb. Reise Russischen Reiches, ii. p. 186 (1775).
Motacilla maura, Pallas, Reise Russischen Reichs, ii. p. 728. no. 17 (1773).
Motacilla tschecantschia, Gm. S. N. i. p. 997. no. 173 (1788), ex Lepechin.
Sylvia rubicola (Linn.), Latham, Ind. Ornith. ii. p. 523. no. 49 (1790).
Sylvia maura (Pallas), Latham, tom. cit. p. 526. no. 62 (1790).
Sylvia tschecantschia (Gm.), Latham, tom. cit. p. 552. no. 161 (1790).
Saxicola rubicola (Linn.), Bechst. Orn. Taschenb. i. p. 220 (1802).
Pratincola rubicola (Linn.), Koch, Baier. Zool. p. 192, "Germany" (1816).
Curruca rubicola (Linn.), Leach, Syst. Cat. Brit. Mus. p. 24 (1816).
Enanthe rubicola (Linn.), Vieillot, Faun. Franç. Ois. p. 191 (1820-30).
Pratincola rubicola (Linn.), Kaup, Entwickelungens-Gesch. europ. Thierw. pp. 114, 191 (1829).
Saxicola fruticeti, C. L. Brehm, Isis, 1828, p. 1282; Vög. Deutschlands, p. 411, "Vienna, Central Germany in April" (1831).
Saxicola media, C. L. Brehm, loc. cit. (1828); op. cit. pp. 411, 1030, pl. xxiii. fig. 1, "Central Germany" (1831).
Saxicola tytis, C. L. Brehm, loc. cit. (1828); op. cit. p. 412 (1831).
Saxicola rubicola, Temm., Franklin, P. Z. S. 1831, p. 119, "Central India;" Sykes, P. Z. S. 1832, p. 91, "Dukhun."
Saxicola urbicola, Küster, Isis, 1835, p. 217, "Sardinia."
Fruticicola rubicola (Linn.), Macgillivray, Hist. Brit. Birds, ii. p. 279. fig. 164 (1839).
"Motacilla rupicola", Linn., Zawadzki (*laps. cal.*), Faun. galizisch-bukowinischen Wirbelth. p. 58 (1840).
Saxicola rubicola (Linn.), Temm. & Schlegel, Faun. Jap. *Aves*, p. 58, "Japan" (1842).
Saxicola saturator, Hodgs., Gray's Zool. Misc. p. 83, "Nipaul" (1844).
Pratincola indica, Blyth, J. A. S. B. xvi. p. 129, "common throughout India" (1847).
Saxicola maura auct., C. L. Brehm, Vogelfang, p. 226, "Southern Europe" (1855).
Pratincola rubicola (Linn.), Hartlaub, Ornith. West-Africa's, p. 66. no. 199 (1857).
Saxicola rubicola (Linn.), v. Schrenck, Amur-Lande, I. ii. p. 358 (1860); Radde, Reise Süd. v. Ost-Siberien, ii. p. 247. no. 127, pl. ix. fig. 2 (1863).
Pratincola indica, Blyth, Jerdon, B. of Ind. ii. p. 124. no. 483, "India, Assam, Burma, Tenasserim, winter visitant only" (1863).
Pratincola rubicola (Linn.), v. Heuglin, Ornith. N.O.-Afrikas, p. 338. no. 285 (1869).

Pratincola indica, Blyth, Swinhoe, P. Z. S. 1871, p. 360. no. 167, "China generally, Hainan, Formosa."

(The above by Lord Walden.)

Stone-Chat, *Bush-Chat*, *Black-headed Bush-Chat*, *Furze-Chat*, English; *Cloichearan*, *Clacharan*, Gaelic; *Tarier rubicole*, *Traquet pâtre*, French; *Cartaxo*, Portuguese; *Cagaropa*, Spanish; *Salinpalo*, Italian; *Carbonier Vistratra*, in Savoy; *Cacamarruggin*, Sicilian; *Buciak*, Maltese; *schwarzkehliger Steinschmätzer*, German; *Roodborst-Tapuit*, Dutch; *Poklaskwa czarnogłowa*, Polish; *Tshekkan tschernochwostyi*, Russian.

Figuræ notabiles.

D'Aubenton, Pl. Enl. 678; Werner, Atlas, *Insectivores*, pl. 74; Kjærb. Orn. Dan. pl. xviii.; Fritsch, Vög. Eur. pl. 25. fig. 4; Sundevall, Sv. Fogl. pl. lxvi. fig. 3; Gould, B. of Eur. pl. 94; id. B. of G. B. ii. pl. xlvii.; Naum. Vög. Deutschl. pl. 90; Schlegel, Vog. Nederl. pl. 92; Bettoni, Ucc. Lomb. tav. 66; Roux, Orn. Prov. pl. 202; Gould, B. of Asia, pt. xv.; Bechst. Orn. Taschenb. pl. 17.

♂ *ad. æst.* capite, collo et dorso nigris, capitis et dorsi plumis vix brunneo apicatis: uropygio albo vix brunneo notato: remigibus brunnescenti-nigris, in pogonio externo vix fulvido marginatis, secundariis intimis ad basin et tectricibus alarum intimis albis speculum conspicuum formantibus, tectricibus alarum reliquis nigricantibus: caudâ nigricante, rectricibus externis in pogonio externo pallidè cervino marginatis: corpore subtùs pallidè rufescente, pectore saturatiore et abdomine pallidiore, collo laterali albo: rostro et pedibus nigris: iride brunneâ.

♂ *ad. ptil. hiem.* præcedenti similis, sed ubique sordidior, capitis et dorsi plumis conspicuè fulvido marginatis, plagâ albidâ in collo laterali obscuriore et rufescente adumbratâ.

♀ *ad. æst.* suprâ nigricanti-brunnea, plumis omnibus rufescente brunneo marginatis: collo laterali albido, rufescente notato: speculo minore quam in mari: corpore subtùs pallidè et sordidè rufescente, vix ochraceo adumbrato: gulæ plumis ad basin nigricantibus et ad apicem sordidè rufescentibus.

Pullus suprâ nigricanti-brunneus, ochrascente brunneo striatus: supracaudalibus rufescentibus: remigibus brunneis, primariis vix rufescente cervino marginatis, secundariis et tectricibus alarum conspicuè eodem colore marginatis: corpore subtùs ochraceo, vix rufescente adumbrato: gutture et pectore indistinctè brunneo striatis.

Adult Male (Hampstead, May 1870). Head, throat, face, nape, and back black; the head, nape, and back having the feathers slightly edged with brown; rump white, slightly marked with brown and black; quills blackish brown, slightly edged on the outer web with fulvous; innermost secondaries at the base and a portion of the inner wing-coverts pure white, forming a conspicuous alar patch, rest of the wing-coverts darker than the quills; tail blackish brown, the outermost feather having the outer web edged with dull light buff; underparts light rufous, darker on the breast, and lighter on the abdomen; sides of the neck pure white; bill and legs black; iris brown. Total length 5½ inches, culmen 0.55, wing 2.55, tail 2.0, tarsus 0.85.

Adult Female in autumn (Macedonia, 13th September). Differs from the spring plumage in having the black feathers tipped broadly with brown, and thus obscured; the white on the sides of the neck is

likewise greatly obscured, the feathers being tipped here and there with rufous; the underparts are paler, and the entire plumage much duller than in spring.

Adult Female in summer (Pagham, Sussex, July). Upper parts dull blackish brown, all the feathers being margined with reddish brown, giving a somewhat striped appearance; the sides of the neck dull white, marked with pale rufous; alar patch small and but slightly perceptible; underparts generally dull light rufous, with a yellowish tinge; throat-feathers blackish at the base, dull rufous at the tip; beak and legs brownish black.

Nestling (Hampstead). Upper parts blackish brown, narrowly striated on the head, and more broadly on the back with yellowish brown; upper tail-coverts rufous; wings and tail dark brown, the feathers on the latter edged with rufous buff, primaries narrowly edged with rufous buff, secondaries and wing-coverts more broadly margined with rufous; underparts dull ochreous, with a slight rufous tinge, on the breast and throat indistinctly striped with dark brown.

Obs. Specimens of the Stone-Chat from various parts of Europe vary somewhat in coloration, those from Southern Europe being somewhat darker- and purer-coloured; but this is by no means a constant difference, as I have British-killed examples as intensely coloured as any from Southern Europe, and quite as black on the upper parts as any of the large series of Indian examples of so-called *P. indica* I have examined. The South-African Stone-Chat, *P. torquata*, L. (*P. pastor*, Cuv.), very closely resembles bright examples of our bird, differing chiefly in having the rufous colour on the breast more restricted, and the abdomen purer white. *P. salax*, Verr. (Rev. Zool. 1851, p. 307), as I am informed by Dr. O. Finsch, runs into *P. sibylla*, differing from that species in having a somewhat different distribution of the brown on the breast; one specimen of *P. sibylla*, from Madagascar, which he examined, forms, he assures me, a link midway between these two species.

The Madagascar Stone-Chat (*P. sibylla*), though closely allied to *P. torquata*, appears, judging from the specimens I have examined, to be a good local race or species, having the bar on the breast very deep in tint and restricted to a large semicircular patch clearly bounded by the pure white of the rest of the underparts.

P. borbonica, from Réunion, of which Captain Shelley has placed a pair at my disposal, may at once be distinguished in both sexes, which, like the other Stone-Chats are dissimilar, by the chin and throat being pure white.

P. hemprichii, Ehr. (Symb. Phys. fol. aa, 1829), from N.E. Africa, differs in having the base of the tail white. When in Berlin, in September last, I examined all the specimens collected by Hemprich and Ehrenberg, and found the white on the tail extremely variable, in some extending to within one third of the end of the tail, whereas in others it was barely visible.

Throughout India, China, and Japan the predominating species appears to be *P. rubicola*; and from the two latter countries I have only seen that form, *P. indica* being identical with it. Canon Tristram has sent to me for examination the types of his *Pratincola robusta* (Ibis, 1870, p. 497), which certainly appears to be a fairly distinct local race, differing from *P. rubicola* in having the breast very dark rich rusty red, this colour extending along the flanks, the rest of the abdomen being pure white. *P. robusta* is also very large, therein contrasting much with the ordinary Stone-Chat of India, which is, as a rule, small in size.

Besides this, of all the Indian Stone-Chats I have examined I can only make one, *P. leucura*, Blyth (Journ. As. Soc. xvi. p. 474), distinct, that species being easily recognizable by having the four outer rectrices white on the inner web nearly to the tip, and all the tail-feathers at the base white on both webs, as is the case with *P. hemprichii*. As may be supposed, this bird is a resident species; and it is found in

Scinde and also in Upper Burmah. I have only examined one specimen from Darjeeling, in the collection of Lord Walden.

Pratincola insignis, Hodgson (Journ. As. Soc. xvi. p. 129), is said by Dr. Jerdon to be similar to *P. rubicola*, but larger, having a white throat and a much larger wing-spot. It has, he writes, been met with in Nepal only, and probably comes from the most northern districts. I have not had an opportunity of examining a specimen.

From the following Table it will be seen how far the measurements of *P. rubicola*, from various localities, and of the various allied species vary :—

| | | | Culmen. inch. | Wing. inches. | Tail. inches. | Tarsus. inch. |
|------------------------------|-----|---------------|------------------|------------------|------------------|------------------|
| <i>Pratincola rubicola</i> | . . | England. | 0·5 —0·6 | 2·55—2·65 | 1·95—2·05 | 0·85—0·9 |
| .. | . . | Spain. | 0·6 — | 2·6 — | 2·0 — | 0·9 — |
| .. | . . | Italy. | 0·55—0·6 | 2·45—2·7 | 1·85—2·1 | 0·85—0·92 |
| .. | . . | Greece. | 0·5 — | 2·4 — | 1·85 — | 0·9 — |
| .. | . . | Cyprus. | 0·6 — | 2·5 — | 2·0 — | 0·9 — |
| .. | . . | Asia Minor. | 0·6 — | 2·51 — | 1·9 — | 0·85 — |
| .. | . . | Palestine. | 0·6 — | 2·5 —2·6 | 1·95—2·1 | 0·9 —0·95 |
| .. | . . | Egypt. | 0·6 — | 2·5 — | 2·0 — | 0·9 — |
| .. | . . | Algeria. | 0·6 —0·63 | 2·5 —2·7 | 2·1 —2·15 | 0·9 —1·0 |
| .. | . . | N.W. India. | 0·52—0·6 | 2·5 —2·75 | 1·8 —2·15 | 0·8 —0·9 |
| .. | . . | Cashmere. | 0·5 — | 2·55 — | 1·9 — | 0·9 — |
| .. | . . | Lake Baikal. | 0·58 — | 2·6 — | 2·1 — | 0·9 — |
| .. | . . | China. | 0·52—0·6 | 2·6 —2·7 | 1·9 —2·1 | 0·8 —0·85 |
| .. | . . | Japan. | 0·6 — | 2·55—2·65 | 2·05—2·15 | 0·8 —0·85 |
| <i>Pratincola hemprichii</i> | . . | Dakar. | 0·55 — | 2·85 — | 1·9 — | 0·9 — |
| <i>Pratincola leucura</i> | . . | Darjeeling. | 0·55 — | 2·6 — | 1·95 — | 0·9 — |
| <i>Pratincola robusta</i> | . . | Himalayas. | 0·6 —0·65 | 2·75—2·8 | 2·25—2·3 | 0·85—0·95 |
| <i>Pratincola sybilla</i> | . . | Madagascar. | 0·6 — | 2·5 — | 2·05 — | 0·9 — |
| <i>Pratincola torquata</i> | . . | South Africa. | 0·6 —0·62 | 2·7 —2·8 | 2·1 —2·2 | 0·9 —0·92 |
| <i>Pratincola borbonica</i> | . . | Bourbon. | 0·58—0·6 | 2·55—2·65 | 2·1 —2·15 | 0·9 —0·95 |

THE Stone-Chat is found throughout Central, and to some extent the milder parts of Northern Europe, down into Northern Africa. Eastward its range extends through India to China and Japan.

With us in Great Britain it is a resident; but it seems that some portion of those that have bred here leave England in the autumn and return again in the spring. Still it is in the winter season by no means a rare bird in many parts of England; for it is rather local in its distribution, though found in every county throughout Great Britain. Mr. R. Gray states that in Scotland it “is very common, and in many districts resident throughout the year. On the coasts of Ayrshire and Wigtownshire its favourite haunts are sandy fields covered with tall, coarse weeds and bramble-bushes.” It is rare in both Orkney and Shetland, and does not breed there; but Dr. Dewar includes it in his list of the birds he found nesting in the Hebrides. In Western and Southern England it is common; and Mr. Cecil Smith informs me that in Somersetshire “it is resident, but in the spring of the year its numbers are considerably increased by arrivals from

abroad. In Guernsey the Stone-Chat and Whin-Chat are both common, but the Stone-Chat the most so, as it may be seen on almost every hedge, bush, and wall. They are by no means confined to the Island of Guernsey, but are equally common in Sark, Alderney, Jethou, and Herm." According to Professor Newton, Mr. Blake Knox says that in Ireland, where the Stone-Chat is common and resident, its numbers increase in the autumn; but he does not mention a spring migration.

In Scandinavia the present species is extremely rare, not having been met with in Norway, being only recorded once in Sweden (a specimen having occurred at Malmö on Christmas eve 1851), and in Denmark, according to Kjærbølling, it has only twice been observed (once in 1843, and in April 1847 another specimen was obtained). In Finland it has not been known to occur, but is found in Central and Northern Russia, where, Mr. Sabanäeff writes to me, it is "rather scarce in the Government of Jaroslaf; and I do not know that it has ever been met with in that of Moscow. According to Hoffmann it occurs near Tcherdyn, which I can confirm from personal observation. I observed it in the Perm Government, from the Bogosloffsky Ural to the boundary of the Government of Orenburg; and it was common in the Bashkir country, though not so numerous as *P. rubetra*. Eversmann states, in error, that it does not occur above 55° N. lat.; for Hoffmann met with it in nearly 62°, and Teplouhoff observed it in 58½° N. lat."

In Poland, Mr. Taczanowski informs me, "it is found in small numbers in the mountainous country near the frontiers of Galicia and Silesia, and never on the plains. According to Kessler it occurs also in Podolia." In Germany its range is somewhat peculiar; for it appears to occur only as an accidental visitor to the east of the Elbe; Borggreve records it as "common in the valley of the Rhine, rarer in Münsterland, rare in Oldenburg and Anhalt, as also in Silesia, and only once observed in Pomerania;" Dr. Rey also writes that it is rare in Saxony. It is found in Holland and Belgium, usually arriving in the latter country in April, and remaining till October; but in Luxemburg De la Fontaine records an exceptionally early appearance on the 10th of January 1865. In Holland it breeds at Noordwijk, near Haarlem, and at Wassenaar. Degland and Gerbe record it as resident at all seasons of the year in the south of France; and it is likewise found in Portugal, where, Dr. E. Rey states (*J. f. O.* 1872, p. 147) that he found it exceedingly common at Algarve, where numbers were breeding. In Spain it is, Major Irby informs me, "extremely numerous, being one of the commonest birds in the south of Spain, where it is a resident. I observed it on the Rock of Gibraltar." Lord Lilford also states (*Ibis*, 1866, p. 388) that it "appears to be very locally distributed in Spain, as, although common in many parts of Andalusia, I never met with it in New Castile;" and Mr. Howard Saunders writes to me as follows:—"In Spain this species is abundant, and resident throughout the year. I was somewhat surprised to find it nesting in the very hottest part of the extreme south of Spain, on the edge of the cultivated ground before entering the great marshes of the Guadalquivir. Its name, which has pretty much the same meaning in all the languages of Latin origin, proceeds from its habits of perching on the garments of the peasants, which, when the owners are working, are frequently hung upon a stick or the handle of a pick, and upon which the bird generally leaves a memento of its visit. In Catalan it is called 'Cague manecs,' which means the same." It occurs on the Balearic islands, where, according to Mr. A. von Homeyer (*J. f. O.* 1862, p. 276), it is one of the commonest species, occurring everywhere.

Passing eastward, I find it recorded by Bailly as "abundant in Savoy, being the first to arrive and the last to leave"—by Bettoni as numerous in Lombardy during the summer, but only a few winter there—and by Savi as resident in Tuscany, frequenting the plains during the winter, but retiring to the mountains during the hot season. Count Salvadori confirms the above statements, and says that in Northern Italy he has found it migratory, but in the central and southern districts resident and, as stated by Savi, frequenting the plains in the winter and the hills in the summer. Professor Doderlein writes that "in Sicily it is very abundant, and partially resident throughout the year, frequenting the higher ground in the breeding-season, and descending to the warmer and moister portions of the coast in winter." It is found in Malta, where, Mr. C. A. Wright writes, it "arrives in spring and autumn, but is rather more common than the Whin-Chat. The Stone-Chat passes the winter with us, which none of its congeners does. Indeed one can scarcely move about any where in the country in winter without seeing his lively little figure." Lord Lilford (*Ibis*, 1860, p. 140) records it as common in summer, and occasionally observed by him in winter, in Corfu and Epirus; and Lindermayer (*Vög. Griechenl.* p. 109) states that it is resident in Greece, frequenting the mountains in the northern portions of the country in the summer, migrating to the southern districts during the winter. Mr. H. Seebohm, who was collecting in Greece last year, informs me that "in the winter it frequents the valleys, and in the breeding-season follows the peasants into the mountains. In the pine-region of the Parnassus I found it very abundant. I obtained eggs of this bird on the north-west spur of the Parnassus in the first week of May."

In Southern Germany it is more numerous than in the north. Dr. Fritsch states that it occurs throughout Bohemia, and has been found breeding near Prague; and the Ritter von Tschusi-Schmidhofen writes to me:—"according to Hanf, it is only met with in Styria during migration; but Seidensacher found it breeding near Cilli, near where it also wintered in 1862-63. In Austria it is rare, and found only singly. I observed one in a garden near the Danube." It occurs in Turkey, where, according to Messrs. Elwes and Buckley, it is not uncommon; and Professor von Nordmann found it nesting here and there amongst the valleys of the Crimean steppes and in the plains of Abasia; Ménéties (*Cat. Rais.* p. 32) refers to it as being common in the Caucasus, where he found it at an altitude of 4000 feet. Strickland obtained it at Smyrna during the winter; and Canon Tristram writes (*Ibis*, 1867, p. 97) that he found it in Palestine "extremely abundant in every part of the country, from the Mediterranean shores to the Dead Sea, in winter; but it took its departure in the beginning of March, not remaining even in the highlands of Lebanon." It was also observed by Mr. G. C. Taylor in Crete.

It occurs in Northern Africa, being, according to Captain Shelley (*B. of Egypt*, p. 81), "very plentiful in Lower Egypt, though comparatively scarce in other parts of the country;" and Von Heuglin (*Orn. N.O.-Afr.* p. 339) states that it arrives in August, leaving again in April. It occurs in Algeria and Morocco, and is recorded by Mr. O. Salvin as by no means uncommon in the Eastern Atlas. Canon Tristram speaks of it as common in the oases of Algeria during the winter; and Major Loche writes that it is abundant in Northern Algeria, but not so in the southern districts. According to Swainson it occurs at Senegal; and Professor Barboza du Bocage obtained it from one of the Portuguese settlements on the west coast. According to Mr. F. DuCane Godman, "Webb and Berthelot met with this bird at Mercedes, in Teneriffe, where,

however, they say it is rare. I did not observe it; nor is its occurrence recorded by Vernon Harcourt in Madeira."

To the eastward the Stone-Chat occurs throughout Siberia and India to China and Japan. De Filippi records it from Turkmanschai in Persia. I have examined specimens from Cashmere; and Mr. Henderson (Lahore to Yarkand, p. 204) records it as "found throughout Cashmere, and in Yarkand, on the banks of the Karakásh river, and wherever there was grass and low jungle, but not otherwise." Mr. A. O. Hume, referring to the specimens collected by Mr. Henderson, says that those obtained in Yarkand in September and November are of the typical *P. rubicola* race, whilst the males procured in June in Cashmere are smaller, and of the intensely black *P. indica* type. As above stated, I am unable in a series to separate *P. indica* from *P. rubicola*, and have been compelled to unite them. *P. leucura* (which is a resident in India, whereas the present species is a migrant) is, as may be supposed, a perfectly distinct species. Speaking of the present species in India, Dr. Jerdon writes (B. of I. ii. p. 125) that it is only a winter visitant "to India, coming in about the end of September or beginning of October. It is found throughout all India, extending to Assam, Burmah, and Tenasserim, but has not yet been noticed in Ceylon. Buchanan-Hamilton, in his MS. notes, says that in the Bhagulpore and Gya districts it remains all the year, building in thickets of reeds; but he has doubtless not discriminated it from *Pratincola leucura*, which I found a resident in those districts. I have seen it in every part of the country, except the more wooded parts of the Malabar coast; and it is never seen in thick or lofty jungle." Dr. Jerdon surmises that the birds which winter in India may pass the summer in Siberia, which is very possible, as the present species is found commonly there. Dr. G. Radde (Reis. im S. von Ost-Sib. p. 247) writes that he met with both the typical European bird and *P. hemprichii*, the former on the shores of Lake Baikal, especially on the western side of the lake, and the latter in the Bureja Mountains and Dauria. Some of the specimens, he states, form a distinct link between the two forms; and he thus considers *P. hemprichii* to be a mere variety, more especially as some of his specimens have the base of the tail black and in others this portion is white, though the white does not extend far up the rectrices. When at Berlin in September last, I examined all the specimens of *P. hemprichii* from Hemprich and Ehrenberg's collection in the Berlin Museum, and found the amount of white on the tail most variable, some having merely a small portion of white at the base of the tail, whereas others had only the terminal third of the tail blackish brown. I cannot, however, look on *P. hemprichii* as the same as the present species, but consider that it belongs to a fairly distinguishable subspecies or race; and I do not think that Dr. Radde could have obtained the true *P. hemprichii* in Siberia; specimens I have examined from Lake Baikal, where it is said by Dr. Dybowski to be common, are certainly identical with our European bird. It is likewise found in Northern Japan, where, according to Captain Blakiston (Ibis, 1862, p. 318), it is common amongst the low scrub in the neighbourhood of the sea during summer; and Mr. Whitely observed numbers in the swampy ground near Hakodadi. Père David met with it in small numbers in Mongolia during migration; and Mr. R. Swinhoe records it (Ibis, 1860, p. 54) as wintering in Amoy, (Ibis, 1861, p. 33) as "common, seen in Hongkong as late as March," (Ibis, 1863, p. 298) as "occasionally met with on the Formosan plains during winter," and (Ibis, 1870, p. 344) as "seen in Hainan about the fields near Kungchow city early in February." Mr. W. T. Blanford (Ibis, 1870, p. 466) met with

it at Pegu, in Burmah; and Captain Beavan (Ibis, 1867, p. 328) records it as not uncommon in the Andaman Islands.

Although in structure so very similar to the true *Saxicolæ* (so much so, indeed, as to make it most difficult to separate it), the present species differs considerably from them in habits: instead of frequenting the desert sandy and stony places, it is to be found on the bush-covered heaths and furze-grown commons, being essentially a bush-bird. Macgillivray remarks that the name Stone-Chat is singularly inapplicable to this species, as it does not frequent stony localities; and he calls it "Black-headed Bush-Chat:" but, although I fully agree with him in what he says, I have not deemed it expedient to alter the name by which it is so commonly known. Speaking of its habits, this gentleman writes:—"although no where abundant, it is to be seen here and there on commons, heaths, and hill pastures overgrown with whins, juniper, and other low shrubs. I have met with it at all seasons; but in Scotland it is of frequent occurrence in winter, although I have seen it and obtained recent specimens there even in the midst of severe snow-storms. Even in England it appears to be rarer in winter; so that probably a partial migration takes place. It is very seldom observed on the ground, its favourite station being the top twig of a whin bush or other shrub, whence it sallies forth on wing in pursuit of insects. When pursued it flits with rapidity from bush to bush, seldom allowing one to get within shot, and now and then concealing itself among the twigs. If wounded, it creeps among the herbage, and is with difficulty traced, although birds of this size are seldom so little injured by shot as to proceed far.

"If you watch its motions, without alarming it, you observe that it flits about by short starts, with a direct flight, perches on a twig, jerks its body and tail, utters at intervals a sharp note resembling the syllable *snack*, now and then flies off in pursuit of an insect, creeps among the foliage, and sometimes hops along the ground, or takes its stand on a turf or other eminence. I have always found its stomach exclusively to contain insects, chiefly small coleoptera, and without any intermixture of mineral particles. . . . In winter I have seen this species about the gardens and even the doors of cottages, apparently not much less familiar than the Robin; but this happens only in severe weather; for at this season it generally continues in its summer haunts, or betakes itself to thickets and hedges. Its song is short, modulated, and not unpleasant, being very similar to that of the Whin-Chat, and frequently performed while the bird is hovering over a bush. It is seldom heard before the beginning of April, or after the middle of June.

"Mr. Weir remarks that in the neighbourhood of Bathgate, in Linlithgowshire, they generally remain among the whins, but that in severe winters they leave them and retire to swampy situations. 'In January 1837,' he continues, 'I saw two or three of them on the public road, within a few yards of a house, in search of food. They sit on the highest branch of a whin-bush, cry *chert, chert* several times, then rise in the air, and hover like a Hawk while they sing their little song. Of all the nests of which I have been in pursuit, theirs is the most difficult to discover, as it is usually built in the middle of a collection of whins, and covered by them. The best way to find it out is to watch the female when she comes off her eggs to take food. Even then she will not go in until you retire to so great a distance that you will scarcely be able to observe her, as she hops so quickly from bush to bush, and then in a moment dis-

appears. I have again and again beat the bush in which they had their nest, before I could make them rise, so closely do they sometimes sit.’”

The present species commences nidification in April, constructing its nest of dry grass and moss, and lining it with hair and feathers and occasionally, though more seldom, wool. The nest is usually placed under a bush or low shrub, and is carefully concealed. The eggs, from four to six in number, are very pale greenish blue, spotted chiefly at the larger end with dull reddish brown dots and small blotches. Specimens in my collection average in size $\frac{2.9}{4.0}$ by $\frac{2.3}{4.1}$ inch. During the breeding-season the parent birds are very jealous of intrusion, and if any one approaches the nest they flit about, manifesting the greatest anxiety, and, emitting their sharp snapping note, do all they can to entice the intruder from their nest.

I have hesitated in recognizing the validity of the genus *Pratincola*, and was at first inclined to follow the example set by Professor Newton, and to include this and the Whin-Chat with the rest of the Chats in the genus *Saxicola*; and hence the plate of both these species was thus lettered; but I have since reconsidered the matter, and have decided on using the generic term *Pratincola*.

The specimens figured and described are all in my own collection, particulars as to locality are given above.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a, ♂, *b*, ♂. Hampstead, October 1869. *c*, ♂, *d*, ♂. Hampstead, November 1869. *e*, ♂. Hampstead, May 1st, 1870. *f*, *g*, ♀. Hampstead, June 1870. *h*, *i*. Hampstead, September 1870 (*Davy*). *j*. Hampstead (*Davy*). *k*, ♂. Highgate, April 9th, 1869 (*Davy*). *l*, ♀. Highgate, May 20th, 1869 (*Davy*). *m*, *n*, *o*, *p*, *q*. Near London, May 20th, 1870. *r*, ♂. Pagham, Sussex, August 25th, 1869 (*R. B. Sharpe*). *s*, ♂. Pagham, April 23rd, 1870 (*R. B. S.*). *t*, ♀. Pagham, June 1870 (*R. B. S.*). *u*, *x*. Pagham, July 8th, 1870 (*R. B. S.*). *y*. Pagham, April 25th, 1872 (*R. B. S.*). *z*, ♂. Cookham, June 1865 (*W. Briggs*). *aa*, ♂. Cookham, September 8th, 1868 (*W. Briggs*). *bb*, ♂. Cookham, March 1870. *cc*, ♂. England (*Cooke*). *dd*, ♀. Piedmont, November 1869. *ee*, ♂, *ff*, ♀. Piedmont, April 21st, 1870. *gg*, ♂. Olympus, Macedonia, September 13th, 1869 (*Dr. Krüper*). *hh*, ♀. Olympus, October 22nd, 1869 (*Dr. Krüper*). *ii*. Egypt (*Taylor*). *jj*, ♀. Lake Baikal, September 20th, 1869 (*Verreaux*). *kk*. Asia Minor, August 19th, 1866 (*Robson*). *ll*, ♂. Lahore (*Marshall*). *mm*, ♂, *nn*, ♀. Simla (*Thornton*). *oo*, ♀. Almorah, April 23rd, 1868. *pp*, ♂. Almorah, June 1st, 1868. *qq*, ♂. Almorah, May 1868 (*W. E. Brooks*). *rr*, ♀. Etawah, March 12th, 1868 (*W. E. Brooks*). *ss*, ♂. November 23rd, 1868 (*W. E. Brooks*). *tt*, ♂, *uu*, ♂, *vv*, ♂, *ww*, ♂. Etawah, March 1869 (*W. E. Brooks*). *xx*, ♂. March 23rd, 1869 (*W. E. Brooks*). *yy*, ♂, *zz*, ♂. Cawnpore, September 29th, 1868 (*W. E. Brooks*). *aaa*, ♀. Koteghur, June 27th, 1869 (*W. E. Brooks*). *bbb*, ♂. N.W. India, March 8th, 1869 (*W. E. Brooks*). *ccc*, ♂. N.W. India, January 28th, 1869 (*W. E. Brooks*). *ddd*, ♂. N.W. India, March 31st, 1869 (*W. E. Brooks*). *eee*. Tingchow, October 1867 (*R. Swinhoe*). *fff*, ♀. Amoy, February 1867 (*R. Swinhoe*). *ggg*. Hakodadi, May 8th, 1865 (*H. Whitely*). *hhh*, ♂. Hakodadi, May 9th, 1865 (*H. Whitely*).

E Mus. Lord Walden.

a, ♂, *b*, ♀. Simla, July 1866 (*R. C. Beavan*). *c*. Koteghur. *d*, *e*, *f*, ♂, *g*, ♀. Umballah, October 1866 (*R. C. Beavan*). *h*, *i*, *j*, ♂, *k*, *l*, ♀. Umballah, November 1866 (*R. C. Beavan*). *m*. Cashmere. *n*, *o*. Amoy.

China, December 1861 (*R. Swinhoe*). *p*, ♂. Hakodadi, May 8th, 1865 (*H. Whitely*). *q*, ♂. May 9th, 1865 (*H. Whitely*). *r*, *s*. Tongoo. *t*, *u*. Khandeish. *v*. Cambridgeshire, 1864.

E Mus. H. B. Tristram.

a, ♂. Greatham, Durham, May 18th, 1866. *b*, ♂. Pagham, Sussex, April 23rd, 1870 (*R. B. Sharpe*). *c*, ♂, *d*, ♀. Engedi, January 22nd, 1864 (*H. B. T.*). *e*. Engedi, February 3rd, 1872. *f*, ♂. Algeria, February 1856. *g*, ♀. Algeria, April 24th, 1856. *h*, ♂. Laghouat, November 18th, 1856. *i*. India. *j*, ♀. Etawah, March 2nd, 1867 (*W. E. Brooks*). *k*, ♀. Etawah, October 4th, 1868 (*W. E. Brooks*). *l*, ♂. Etawah, February 18th, 1870 (*W. E. Brooks*). *m*, ♂, *n*, ♀. Etawah, September 13th, 1870 (*W. E. Brooks*). *o*, ♂. Almorah, April 29th, 1868 (*T. C. Jerdon*). *p*, ♂. Almorah, June 13th, 1868 (*T. C. J.*). *q*, ♂, *r*, ♂. (*T. C. J.*). *s*, ♂. January 28th, 1869 (*T. C. J.*). *t*, ♂. March 16th, 1869 (*T. C. J.*). *u*. Amoy, November 9th, 1859 (*Blyth*). *x*. Amoy, January 1860 (*Blyth*). *y*, *z*. Amoy. *aa*, ♀. Larnaka, Cyprus, November 17th, 1863. *bb*. Andalusia (*Howard Saunders*). *cc*. Callinhoe, February 29th, 1872.

E Mus. Howard Saunders.

a, *b*, ♂ *ad.* Valencia, April and November. *c*. Malaga, October 14th. *d*, ♀. Valencia, November 25th.

PRATINCOLA HEMPRICHI.

(WHITE-TAILED STONECHAT.)

Saxicola hemprichii, Ehr. Symb. Phys. *Aves*, fol. *aa* (1829).*Pratincola hemprichii* (Ehr.), Bp. Consp. Gen. Av. i. p. 304 (1850).*Motacilla (Saxicola) rubicola*, Eversm. J. f. Orn. 1853, p. 289 (nec Linn.).*Pratincola rubicola hemprichii* (Ehr.), Heugl. Orn. Nordost-Afr. i. p. 339 (1869).*Figura nulla.*

♂ *Pratincolæ rubicolæ* similis sed caudæ dimidio basali (rectricibus centralibus exceptis) albo, supracaudalibus albis nec nigro maculatis, sed vix rufescenti terminatis.

♀ *Pratincolæ rubicolæ* similis sed pallidior, caudâ ad basin rufescenti-cervino-albidâ.

Adult Male (Annesley Bay). Resembles *Pratincola rubicola*, but is rather paler in general coloration, and the tail is white at the base, the feathers being all white on the basal two thirds, except the two central ones, which are white only at the base, all being also tipped and margined with sandy buff, the two outer ones more distinctly so than the others; rump and upper tail-coverts white, tipped with rufous. Total length about 4·7 inches, culmen 0·45, wing 2·85, tail 2·0, tarsus 0·85.

Adult Female (Thebes). Resembles the female of *Pratincola rubicola*, but is paler in general coloration, and has the base of the tail buffy white.

As stated in my article on the Stonechat, I cannot but consider that the present species, though very closely allied, is fairly separable from *Pratincola rubicola*. That it occurs within the limits of the Western Palæarctic Region there can be no doubt; for Eversmann remarks (*l. c.*) that he often saw examples of the Stonechat on the southern slopes of the Ural which had the major portion of the tail white; but I do not possess, nor have I ever seen, a European-killed specimen.

Its range is very restricted; for it is only known with certainty to inhabit Western Asia, South-eastern Europe, and North-east Africa. Von Heuglin states that, though tolerably rare, it is in all probability resident in Egypt, in the desert portion of Arabia, and in the wooded portions of Abyssinia; and Mr. Blanford obtained it in this last country. In the Berlin Museum I examined a series of specimens obtained by Hemprich and Ehrenberg in Egypt, which, I may remark, differed considerably in the quantity of white on the tail, some having only the base of the rectrices white, whereas in others only the terminal third was black.

In Asia it does not appear to range far. Severtzoff states that it breeds in Turkestan; but, though De Filippi met with it at Marend, north-west, and Udián, south-west of Tabriz, and mentions that he saw specimens at St. Petersburg collected in the Kirghis steppes, Mr. Blanford did not observe it in Persia.

Von Middendorff and Radde speak of the Stonechats obtained by them in Siberia as having

white at the base of the tail; but I can scarcely think that any of the birds obtained by them are referable to the present species.

In habits and nidification this bird is said not to differ from *Pratincola rubicola*; but I have never had an opportunity of seeing its nest or eggs.

I do not possess a specimen; nor have I been able to procure any examples for examination, except those in the British Museum; and as it differs so little from *Pratincola rubicola*, I have not deemed it necessary to figure it.

In the preparation of the above article I have examined the following specimens:—

E Mus. Brit. Reg.

a, ♂ *ad.* Annesley Bay, Abyssinia (*W. T. Blanford*). *b*, ♀ *ad.* Thebes (*Leith Adams*). *c*, ♀ *ad.* Bogos Land (*Esler*).

Genus RUTICILLA.

- Motacilla* apud Linnæus, Syst. Nat. i. p. 335 (1766).
Sylvia apud Scopoli, Ann. I. Hist. Nat. p. 157 (1769).
Saxicola apud Koch, Baier. Zool. p. 186 (1816).
Ænanthe apud Vieillot, Nouv. Dict. xxi. p. 431 (1818).
Ficedula apud Boie, Isis, 1822, p. 553.
Ruticilla, C. L. Brehm, Isis, 1828, p. 1280.
Phœnicura apud Swainson, Faun. Bor.-Am. ii. p. 489 (1831).
Lusciola apud Keyserling & Blasius, Wirbelth. Eur. p. 58 (1840).
Erythacus apud Degland, Orn. Eur. i. p. 504 (1849).
Chamærrhous apud Bonaparte, Compt. Rend. xxxviii. p. 8 (1854).

ALTHOUGH closely allied to the *Saxicolæ*, the Redstarts differ sufficiently in habits, if not in form, to be kept apart in a separate genus. Compared with the *Saxicolæ* they have a shorter bill and longer tail; and compared with the *Pratincolæ*, to which they are also closely allied, they have a longer, more slender, and straighter bill, more slender legs, and a longer tail. The genus *Ruticilla* inhabits the Palæarctic, Ethiopian, and Indo-Malayan Regions, the species being most numerous in the Palæarctic and Indian Regions. Six species inhabit the Western Palæarctic Region, only two of which are British.

They are more arboreal in their habits than the *Saxicolæ*, and approach nearer in that respect to the Bluethroats and Redbreasts. They inhabit gardens, groves, and cultivated places where there are trees and bushes; and one or two species frequent mountainous localities. They are active, lively birds, feeding chiefly on insects, which they often catch on the wing like the Flycatchers. They build in holes in trees or in walls, and deposit pale blue or bluish white eggs, those of *Ruticilla titys* being nearly pure white; generally the eggs of the Redstarts are unspotted, though some species lay eggs which are slightly spotted with pale rufous. They are good songsters, some of the species having, however, a much better song than others.

Ruticilla phœnicurus, which I take to be the type of the genus, is a rather slenderly formed bird, having a soft and blended plumage; the bill is slender, rather depressed at the base; nostrils small, elliptical, placed in the fore part of the nasal membrane; gape with tolerably large bristles; wings rather long, straight, the first quill short, rather longer than the coverts, the second rather longer than the sixth, the third longest; tail long, slightly rounded; legs slender, the tarsus covered anteriorly with a long plate and three inferior scutellæ; middle toe with claw slightly shorter than the tarsus.

Almost all the species belonging to this genus are richly coloured, and have the tail rufous.



COMMON REDSTART.
RUTICILLA PHENICURUS
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RUTICILLA PHÆNICURUS.

(REDSTART.)

- Motacilla phœnicurus*, Linn. Syst. Nat. i. p. p. 335 (1766).
Le Rossignol de muraille, Montbeillard, Hist. Nat. Ois. p. 74 (1783).
Sylvia phœnicurus (L.), Lath. Ind. Orn. ii. 511 (1790).
Saxicola phœnicurus (L.), Koch, Baier. Zool. p. 188 (1816).
Ficedula phœnicurus (L.), Boie, Isis, 1822, p. 553.
Ruticilla sylvestris, C. L. Brehm, Vög. Deutschl. p. 363 (1831).
Ruticilla arborea, C. L. Brehm, tom. cit. p. 363 (1831).
Ruticilla hortensis, C. L. Brehm, tom. cit. p. 364 (1831).
Phœnicura muraria, Swains. Faun. Bor. Am. ii. p. 489 (1831).
Phœnicura rutacilla, Swains. Classif. of B. ii. p. 240 (1836).
Ficedula rutacilla, Eyton, Cat. Brit. B. p. 10 (1836).
Ruticilla phœnicura (L.), Bonap. Comp. List, p. 15 (1838).
Lusciola (Ruticilla) phœnicurus (L.), Keys. & Blas. Wirbelth. Eur. p. 58 (1840).
Ruticilla pectoralis, Th. von Heugl. Journ. für Orn. 1863, p. 165.

Redstart, *Redtail*, *Firetail*, English; *Ceanu Dearg*, Gaelic; *Rouge-queue*, *Bec-fin des murailles*, French; *Rabiruiva*, Portuguese; *Culirojo*, Spanish; *Kudiross*, Maltese; *Codirosso*, *Cudarussa*, Italian; *Gartenröthling*, *Rothschwanz*, German; *Roodstaartje*, Dutch; *Blodfugl*, *Rödstjert*, *Blodstjert*, Danish; *Rödstjert*, Swedish; *Rödstjert*, Norwegian; *Leppälintu*, Finnish; *Sarnitchka*, Russian.

Figuræ notabiles.

D'Aubenton, Pl. Enl. 351. fig. 2; Werner, Atlas, *Insectivores*, pls. 51, 52; Kjærbölling, Orn. Dan. taf. 20–22; Frisch, Vög. Deutschl. pls. 19, 20; Fritsch, Vög. Eur. pl. 23. figs. 15, 16; Sundevall, Sv. Fogl. pl. 12. figs. 4, 5; Gould, B. of Eur. pl. 95; id. B. of G. Brit. ii. pl. 51; Naumann, Vög. Deutschl. taf. 79. figs. 1, 2; Schlegel, Vog. Nederl. pl. 83.

♂ *ad.* fronte albâ, supra basin rostri nigrâ, striâ superciliari albâ: pileo, nuchâ, dorso, scapularibus tectricibusque alarum superioribus cærulescenti-cinereis vix rufescente lavatis: uropygio, supracaudalibus et caudâ, rectricibus duabus centralibus exceptis, rufescenti-ferrugineis, rectricibus centralibus sordidè brunneis ferrugineo marginatis: remigibus saturatè brunneis, in pogonio externo vix pallidior et albicante marginatis: gulâ, jugulo, lateribus colli et capitis usque per oculos nigris: pectore, hypochondriis et tectricibus subalaribus rufescentibus: abdomine et subcaudalibus albis, his vix rufescente lavatis: rostro et pedibus nigris: iride fuscâ.

♀ *ad.* mari dissimilis, suprâ brunnescenti-grisea: uropygio et caudâ ut in mare coloratis sed sordidioribus: genis, gulâ et jugulo sordidè albicantibus vix rufescente tinctis: pectore, tectricibus subalaribus et

hypochondriis sordidè et pallidè rufescentibus: abdomine albido: subcaudalibus albidis vix rufescente tinctis.

Pullus pileo brunneo, vix ochraceo notato: dorso, scapularibus tectricibusque alarum brunnescenti-ochraceis profusè nigricante brunneo fasciatis: uropygio vix ferrugineo lavato: supracaudalibus caudâque ferrugineis, illis nigricante fasciatis: rectricibus duabus centralibus nigricanti-brunneis ferrugineo apicatis: corpore subtùs flavicanti-ochraceo, ubique nigricante brunneo notato et fasciato.

Adult Male (Hampstead, Middlesex, 14th April). Forehead, except a narrow black frontal line, white, this colour extending backward over the eye; crown, nape, back, scapulars, and lesser wing-coverts dark bluish ash, slightly washed with reddish brown; rump, upper tail-coverts, and tail, excepting the two central rectrices, bright rusty red, with an orange tinge; the two central rectrices dull brown, edged with fox-red; wings dull brown, on the outer web narrowly margined with light brown and dirty white; lores, sides of the face, including the space before and above the eye, throat, and sides of the neck jet-black; breast, under wing-coverts, axillaries, and upper part of the flanks rich orange-red, this colour becoming paler on the lower part of the flanks; remainder of the underparts white, on the under tail-coverts washed with pale orange; bill and feet blackish; iris dark brown. Total length about 5·5 inches, culmen 0·6, wing 3·1, tail 2·5, tarsus 0·9.

Adult Female (Hampstead, 10th April). Crown, nape, back, and scapulars brownish grey; rump, upper tail-coverts, and tail (excepting the two central feathers, which are reddish brown) orange-red, duller in tinge than in the plumage of the male; wings as in the male, but duller and browner in tinge; throat greyish white, slightly washed with rufous; chin paler than the rest of the throat, rest of the underparts dull white, on the breast, flanks, and under tail-coverts strongly tinged with orange-red; under wing-coverts pale orange-red. Total length about 5·25 inches, culmen 0·6, wing 2·9, tail 2·45, tarsus 0·85.

Male in winter (Ortakeuy, Turkey, 25th September). Upper parts brownish, with but faint traces of the grey summer plumage, the white on the forehead hidden by brown tips to the feathers; underparts as in the female, but breast and flanks washed with orange, and on raising the feathers of the throat it can be seen that they are black, the tips only being brownish grey.

Nestling (Mezen, Russia, 13th July). Upper parts dull ochre-yellow, each feather broadly barred with blackish brown; crown almost entirely blackish brown, the yellowish colour showing but little; tail and upper tail-coverts fox-red, the latter lighter in colour, and narrowly barred with blackish; wings as in the adult, but with the secondaries much more broadly margined with rufous; underparts sandy yellow, washed with reddish on the lower part of the abdomen and under tail-coverts, and closely marked with blackish brown.

THE present species is common in Europe during the summer, but migrates southward at the approach of winter. It is generally distributed throughout the Continent, and breeds nearly as far north as the North Cape. In England it is common, except to the westward of Exeter, where, according to Professor Newton, it is rare. Mr. Brooking Rowe, in his list of the birds of Devon, states that it is "scarce in the south, common in the middle and north of the county;" and Mr. Cecil Smith informs me that in Somersetshire the "Firetail," as it is there called, "is a very common and regular summer visitant. It sometimes appears quite amongst the first arrivals. I saw one last year on the 25th of March; but I think this is exceptionally early, as I have not usually seen the Redstart before the first week in April. One year a pair of Redstarts remained

in one of the combs on the Quantocks until the 23rd of October. I was in hopes that, as they had stayed so long, and the place was a warm one, they would remain the winter there; but I never saw them afterwards, though I rode to the place several times to look for them." Speaking of its range in Scotland, Mr. Robert Gray writes (B. of W. of Scotl. p. 84) as follows:—"I have not seen this species in any of the Hebrides, but have traced its occurrence in all parts of the western mainland, from Wigtown to Inverness-shire. It visits annually the neighbourhood of Glasgow, and breeds within the city boundaries. Thirty years ago it would appear to have been a much commoner bird in Lanarkshire than it is now. Near Hamilton, according to the Rev. Mr. Patrick, it was 'exceedingly abundant' in 1835. On the east coast it arrives about the same time as the Wheatear, perhaps a little later. It is found occasionally in Shetland." Captain Clark-Kennedy informs me that he saw it on Hoy Island, Orkneys, in August 1870. In Ireland it is extremely rare; and Thompson states that he has seen but one specimen killed in that country.

I do not find it recorded as having been met with in Iceland or the Færoes; but it is common in Scandinavia, and Mr. R. Collett writes that in Norway he found it common at Alten, near Bosekop, and in Tromsö, in the months of June and July; it is of frequent occurrence in East Finmark, and has been found breeding near Renö, in 70° 20' N. lat. Professor Sundevall speaks of it as common throughout Sweden up into the arctic circle; and, so far as my experience goes, it is certainly one of the commonest of all the summer visitants to Finland. I found it common not only in the southern and central portions of the country, but almost, if not equally so, in Uleåborgs Län, in the north of Finland. I have specimens from Archangel, where it is said to breed numerously; and it is common in Northern as well as in Central Russia. Mr. L. Sabanäeff writes to me that it "is found everywhere in the Ural range as far as the Bogosloffsky Ural, and is common on the western slope; it breeds in the woods in the Shadrinsk district."

In the Baltic Provinces and throughout the whole of North Germany it is common and generally distributed during the summer season, arriving about the first week in April and leaving again for the south late in September. It does not appear to be so common in Denmark as in Sweden or Germany, as Kjærbölling refers to it as being neither common nor yet very rare; and Mr. Fischer speaks of a pair as having bred in the Drottninglund garden near Copenhagen in 1863. In Holland and Belgium it is found during the summer season; but in Luxemburg it appears to be rarer than *Ruticilla titys*. From Northern and Central France it is recorded as common from May to October; but in the southern part of that country it is, Messrs. Jaubert and Barthélemy-Lapommeraye state, merely a visitant during the season of migration, nor does it remain to breed until it reaches the elevated ground on the frontiers of Savoy. In Portugal it would appear to be rare, as Dr. E. Rey writes (J. f. O. 1872, p. 147) that he only observed it once in that country. It is found in Spain; and Mr. Howard Saunders says (Ibis, 1869, p. 210) that it occurs at Granada in the spring, and probably breeds there. Dr. A. E. Brehm, however, writes (J. f. O. 1858, p. 55), "it visits Spain only during the two seasons of migration. We obtained specimens in May 1856, at Masnou, near Barcelona; but some days subsequently we observed none. Near Murcia I first saw them on their southward journey on the 18th September; and near Madrid the first were observed wandering northwards on the 2nd April, 1857. They were in small flocks, but were not numerous." Mr. A. von Homeyer (J. f. O. 1862, p. 274) met

with this species on the Balearic Isles, always near the mountains; and as he observed them late in April and also late in May, he surmises that it remains there to breed.

Passing eastward, again, I find that in Savoy and Italy it arrives in April and leaves in October, selecting the higher districts for the purpose of nidification. In Sicily, according to Professor Doderlein, it is principally met with during the seasons of migration, though a few pairs remain to breed. In Sardinia, according to the same author, it is very abundant. Mr. C. A. Wright includes it in his list of the birds of Malta and Gozo (*Ibis*, 1864, p. 66) as common in spring and autumn, and staying there several weeks during its migrations. Lord Lilford observed it in the Ionian Islands, where, he writes (*Ibis*, 1860, p. 228), it arrives in March in small numbers, remaining only a few days; but both Von der Mühle and Lindermayer agree in stating that it is common in all the provinces of Greece, and remains to breed in the northern portion of that country. In Southern Germany it is common during the summer, and remains there to breed. Dr. A. Fritsch writes (*J. f. O.* 1871, p. 198) that it arrives in Bohemia in April and leaves in September; the Ritter von Tschusi Schmidhofen met with it in the Riesen-Gebirge, near the Tannenstein. Captain Clark-Kennedy informs me that he found it extremely abundant in the Tyrol, and in various parts of Bavaria, in the autumn of 1868. It occurs all along the Danube; and I met with it in Hungary, Wallachia, and Servia, and have specimens obtained by Mr. Robson near Constantinople. Professor von Nordmann records it as found about gardens in Southern Russia in spring and summer, but, owing probably to the absence of old trees, only a few individuals remain to breed. During the hot season it is numerous in the Crimea and all along the eastern shores of the Black Sea. Ménétries (*Cat. Rais.* p. 35) states that it is common in the woods of the Caucasus, especially those near Lenkoran. Canon Tristram records it from Palestine (*Ibis*, 1867, p. 87) as being "strictly a summer migrant, arriving simultaneously all over the country about the 12th of March, but only in the more wooded localities and the neighbourhood of gardens." Mr. Wyatt observed it on the peninsula of Sinai; and Hemprich and Ehrenberg obtained specimens in Arabia. In Egypt it occurs during the seasons of migration, and, according to Captain Shelley (*B. of Eg.* p. 82), "it arrives about the middle of March, when it becomes plentiful both in Egypt and Nubia. A few individuals possibly winter in the country; for I once obtained a specimen in the beginning of February. It may generally be found frequenting rows of sown trees, where it chooses some prominent bough; but if alarmed, it takes refuge at once among the foliage, or flits on before the intruder from tree to tree, resting on some shady bough a few feet from the ground. The Redstart passes southward again about September." Captain Clark-Kennedy informs me that he met with it in Nubia at the end of March, and that it was especially common amongst the ruined temples on the island of Philæ and in the outskirts of Assouan. It appears to winter on the White Nile and in Abyssinia, in which latter country Mr. W. Jesse found it "common about Senafé and down the Sooroo Pass on the 25th of April." In North-western Africa it is said by Loche and Malherbe to occur in Algeria during migration, though not in great numbers; and Mr. Taczanowski records it as but rare in the elevated portions of Algeria. Mr. O. Salvin (*Ibis*, 1859, p. 308) met with it near El Djem, in the south of the Regency of Tunis, at the end of February; and Mr. Chambers Hodgetts shot it in Tripoli. Dr. Hartlaub (*Orn. W. Afr.* p. 68) records it as

occurring at Senegal; and Mr. F. DuCane Godman writes (*Ibis*, 1872, p. 176) that it occurs in the Canaries and at Madeira; and it is also said by Berthelot to inhabit Teneriffe.

To the eastward the present species can, so far as I can ascertain, be traced with certainty only to Persia, where, according to De Filippi, it breeds in the royal gardens at Kazvin. Specimens have also been received from Erzeroum and Trebizond; and Mr. Blanford has lent to me for examination the skin of a female obtained by Major St. John at Shiraz in December 1870. It is stated to have been met with in India; but I have been unable to trace and examine any specimen obtained there. One which was obtained at Saharunpore by Dr. Jameson is said to be in the India-House Museum; but as no access is permitted to that collection, it is impossible to decide whether the specimen is really our European Redstart or one of the allied Indian species. On the whole I am greatly inclined to doubt if the present species has ever occurred so far east as India. It has likewise been recorded as inhabiting Siberia; but out of numbers of Redstarts I have seen from various parts of that country, I have never found one which I could refer to the present species, and think it at least very doubtful if it really has ever been met with there.

In its habits the Redstart is sprightly and active, and is continually on the move, either in search of food or else with apparently no particular object in view for the moment, except a disinclination to remain quiet. It is quarrelsome, and may often be seen squabbling with some other warbler or one of its own species; and, like the Redbreast, the male rarely brooks an intruder in the domain it has chosen. Though often seen in gardens in the immediate neighbourhood of houses, it is by no means so tame or confiding as the Redbreast, but always, to some extent, shy and suspicious. It has a peculiar habit of keeping its tail in almost continual motion. Every time it rests for a second when hopping on the ground or through the branches the tail is moved up and down, the movement not being at all sideways. Irrespectively of its bright plumage, this peculiar habit of moving its tail makes it easily recognizable at a considerable distance. Its song is sweet and flute-like, but comparatively feeble, and consists of only three strophes; in general tone it is rather melancholy. It is said to sing more continuously on dull days and before rain; but personally I have not found this to be the case. Macgillivray says that "the song is sometimes emitted while the bird hovers on the wing, and even while it flies from one station to the other; it is heard in fine weather at early dawn, as well as in the evening twilight, and at all intermediate hours, although, being neither loud nor attractive by its characters, it is little noticed." Its call-note is a clear whistle, which is sometimes followed by one or two short sharp notes. It feeds on flies, gnats, small butterflies, and various kinds of small coleopterous and other insects, caterpillars, &c. It is exceedingly active in catching flies on the wing, and does so with almost as great facility as the common Flycatcher. It seldom hops about on the ground much in search of food, but hunts amongst the foliage, or else, as above stated, catches flies on the wing. On the Continent the Redstart is often caught and let loose in a room to catch the gnats and flies; and Count Casimir Wodzicki states (*J. f. O.* 1853, p. 298) that one he let loose in his room and watched for an hour caught in that space of time six hundred of those insects, or on the average ten per minute, thus showing how large a number of insects can be destroyed by a single bird.

The Redstart commences nidification late in April or early in May; and I have usually taken

its eggs in the early part of the latter month. Its nest is sometimes loosely constructed, and at others, though less frequently, neatly finished. The outer portion is made of dried grass-straws, fine roots, and moss; and the lining is composed of hair and feathers. Mr. Robert Collett sent me a very beautiful and carefully constructed nest of this bird which was taken by him out of a hollow birch tree in Norway on the 9th of June 1872, and which is formed chiefly of the hair of the Lemming (*Myodes lemmus*), and lined with white feathers of the Willow-Ptarmigan. Messrs. Harvie Brown and Alston also inform me that they "took a Redstart's nest on the Fille-fjeld, at an elevation of over 3000 feet, on the 12th of June, 1871, out of a hollow tree which was still surrounded by patches of snow, and that this nest was composed entirely of the pure white feathers of the Willow-Ptarmigan, the contrast of which with the pale blue eggs was extremely beautiful." I have usually found the nest of this species in a hollow tree or a hole in a wall, most frequently in the former position; but Professor Newton says that it is also to be found "placed in the roof of a building or behind a branch of a tree that is trained against a wall, and sometimes in a hole on the ground, even where there has happened to be abundance of trees; while many more exceptional localities have been observed to be chosen on occasion by the bird—such as a large inverted flower-pot, to which entrance was obtained through a hole in the bottom, a partly open drawer in a garden-shed, the gudgeon of a door-hinge, as figured by Bishop Stanley, not to mention convenient niches in the interior of inhabited houses. In Lapland on more than one occasion Wolley found that a Redstart had laid its eggs in the nest of a Titmouse (*Parus cinctus*).” Mr. Carl Sachse, who informs me that it arrives at Altenkirchen, near Coblenz, on the Rhine, late in March or early in April, and leaves in August or September, says that it breeds oftener in the woods than in the gardens, and places its nest in hollow trees or else in the holes of old walls, or in niches and holes in the bridges. He also took nests in Saxony both in the hollow portions of old willows and also on those trees. Mr. R. Collett informs me that in June 1871 he took a Redstart's nest with eight eggs at Selsvand, north of Namsos, and that it was built within eighty paces of a nest then occupied by a pair of Sea-Eagles (*H. albicilla*), who probably looked on the Redstarts as too insignificant to be interfered with. I have often noticed that small birds build close to or even in the foundations of nests tenanted by the larger raptors, probably because they feel themselves more secure in the vicinity of so powerful a neighbour, and are themselves too small and insignificant to be attacked by him. I have seen nests of *Aquila mogilnik* and *Aquila pennata*, the foundations of which were full of Sparrows' nests.

Mr. Weir informed Professor Macgillivray that a pair of Redstarts built their nest and reared their young in a hole at the gable end of a cottage within a few yards of a public road, although a weaver occupied the house and had from five o'clock in the morning until ten at night three looms in continual operation within twelve feet of the nest, which was in the inside of the garret, and only a few open planks placed between them.

I have a series of Redstarts' eggs obtained chiefly in Finland and England by myself, and in Norway by Mr. R. Collett, all of which are of a clear greenish blue colour, and vary in size from $\frac{2.8}{4.0}$ by $\frac{2.3}{4.0}$ to $\frac{3.1}{4.0}$ by $\frac{2.3}{4.0}$ inch. Sometimes the eggs of this species have a few faint reddish specks scattered over the surface of the shell. The number of eggs deposited varies from five to eight; and two broods are usually raised in the season.

The specimens figured are an adult male and female in breeding-plumage, they being the specimens described, and in my collection.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a, ♂. Hampstead, April 14th, 1870 (*Davy*). *b*, ♀. Hampstead, April 10th, 1870 (*Davy*). *c*, ♂. Hampstead, October 6th, 1871 (*Davy*). *d*, ♀, *e*, ♀. Hampstead, September 1870 (*Davy*). *f*, ♂. Hampstead, August 2nd, 1871 (*Davy*). *g*, ♀. Pagham, Sussex, July 1870 (*Sharpe*). *h*, ♂. Hampstead, August 21st, 1871 (*Davy*). *i*, ♂, *k*, ♀, *l*, ♂, *m*, ♂, *n*, ♀. Hampstead, May 1st, 1870 (*Davy*). *o*, ♀. Hampstead, April 22nd, 1870 (*Davy*). *p*, ♂. Hampstead, April 20th, 1870 (*Davy*). *q*, ♀, *r*, ♂. Hampstead, April 13th, 1870 (*Davy*). *s*, ♂. Hampstead, April 7th, 1870 (*Davy*). *t*, ♂. Valencia, March 29th, 1872 (*H. Saunders*). *u*, ♀. Valencia, April 22nd, 1872 (*Howard Saunders*). *v*, ♂. Turkey, September 25th, 1869 (*Robson*). *w*, ♀. Egypt, April 1871 (*G. E. Shelley*). *x*, ♀. White Nile (*Rollet*). *y*, ♂. Mount Lebanon, June 16th, 1864 (*J. K. Lord*). *z*, juv. Norway, July 21st, 1871 (*Collett*). *aa*, young. Mezen, Russia, July 13th, 1873 (*Piottuck*).

E Mus. J. H. Gurney, jun.

a, juv., *b*, ♀. Castle-Eden Dene, Durham, May 10th, 1866. *c*, ♂. Norwich, May 1865 (*Gunn*). *d*, ♀. Cromer, April 9th, 1872. *e*, ♂, *f*, ♂. Lizard Lights, Cornwall, March 1st, 1872 (*Palmer*). *g*, ♂ juv. Hampstead, September 1870 (*Davy*).

E Mus. Ind. Calc.

a, ♀. Shiraz, Persia (*Major St. John*).



Keulemans lith.

M&N Hannart imp

EHRENBERG'S REDSTART.
RUTICILLA MESOLEUCA

RUTICILLA MESOLEUCA.

(EHRENBURG'S REDSTART.)

Sylvia mesoleuca, Ehr. Symb. Phys. Aves, fol. *ee* (1829).*Ruticilla mesoleuca* (Ehr.), Sclater & Taylor, Ibis, 1876, p. 64.*Figura nulla.*

♂ *ad.* *R. phænicuro* similis, sed corpore suprâ saturatiore, gulâ magis nigrâ, corpore subtùs ferrugineo-aurantiaco, abdomine centrali albo notato: alis saturatioribus, secundariis extùs a basi ferè ad apicem albis: rostro et pedibus nigris, iride fuscâ.

♀ *ad.* *R. phænicuro* similis, sed suprâ grisescentior, fronte et capitis lateribus griseo-albidis, his sordidè cinereo tinctis: corpore subtùs pallidiore, pectore vix griseo-aurantiaco tincto.

Adult Male (Taurus, 5th April). Differs from the male of the common Redstart in having the upper parts, more especially the head, much darker, the white on the forehead more extended, the black on the throat more intense; and the entire underparts below the throat are rich orange-red, the centre of the abdomen alone being marked with white; the wings are darker and greyer, while the secondaries have almost the whole of the outer web, from the base nearly to the tip, pure white, forming a very conspicuous white alar patch; bill and legs black; iris brown. Total length about 6 inches, culmen 0·5, wing 3·1, tail 2·45, tarsus 0·82.

Adult Female (Taurus, 8th April). Differs from the female of *Ruticilla phænicurus* in having the upper parts greyer, the forehead and sides of the head dirty greyish white, the latter tinged with brownish ash; underparts much greyer and more sooty than in *R. phænicurus*, the breast only tinged with dull greyish orange.

Obs. There is, comparatively speaking, but little variation in the specimens I have examined; but the amount of white on the wing in the male varies somewhat, and in some specimens the back is very dark, and marked with black.

UNTIL quite lately the information on record respecting the present species was exceedingly scanty, scarcely any thing being known about it. It was first discovered by Messrs. Hemprich and Ehrenberg, who obtained a single example near Djedda; and when, in company with Mr. Blanford, I examined this bird in the Berlin Museum in 1873, we believed it to be unique. Mr. Seebohm, who visited Constantinople in 1872, informed me on his return that he had seen in the possession of Mr. Robson a male of the present species, which Mr. Robson had shot near that town. He also found a specimen in the collection of Dr. Krüper, which had been shot near Smyrna on the 21st March, 1872, and which he purchased and brought to me for examination. In 1873 Mr. Seebohm visited Athens, and in the Museum of that town he found another specimen, which Mr. Schrader informed him was shot near that town. Dr. Sclater, who in 1875 examined a second specimen (obtained near Constantinople, and now in the American collec-

tion at Bebek), says that it was captured by bird-lime near Haskey in the autumn of 1874, and adds that Mr. E. C. Taylor possesses one obtained by Dr. Krüper near Smyrna. Captain Elwes, who made a journey in Asia Minor in the spring of 1874 for the purpose of collecting, met with the present species there, and brought two specimens home for comparison and identification, one of which he presented to me. From his observations and the investigations made in the Taurus by Mr. C. G. Danford, it would appear that the true home of the present species is in that corner of the Western Palæarctic Region; and as it has remained so long almost unknown, its range must be, comparatively speaking, but small. Captain Elwes informs me that he first observed this bird at Ephesus, in Asia Minor, and was at once attracted by its conspicuous white alar patches. He saw a pair sitting on the ruins of one of the old temples, and shot the male without difficulty; but the hen bird escaped; and though he saw one or two other pairs, he never succeeded in shooting a female. Afterwards he saw it on one occasion in Lycia, but did not observe it in the two hundred miles of intervening country. In habits, he says, it much resembles the Black Redstart, frequenting open stony hills and perching on stones and on the stalks of the giant fennel plants which grow amongst them. Mr. C. G. Danford appears, however, to have discovered the true home of the present species in the Taurus mountains; for not only did he obtain many specimens, but he found it breeding, and was fortunate enough to take its nest and eggs, which he has lent me for examination. I am also indebted to this gentleman for the following notes, viz.:—"The river Sihoun, after leaving the gorge of Anasclia, flows rapidly down a straight narrow valley, whose high mountain-sides are in some places huge walls of purple-grey and orange rock, and in others are clothed with the varying greens of oak, fir, spruce, and cedar. Some four miles along this valley, through willows (*Salix purpurea*), tamarisks (*Tamarix smyrnensis*), and thickets set with great white thorns, bring one to the summer village of Kara pongar (black spring). It is a sorry collection of a dozen huts placed on a grassy slope near the spring, which bursts in large volumes from a dark ivy-hung rock, and winds down to the river through a most beautiful wood of plane and other trees. The ground here was a perfect carpet of violets and primroses, with anemones of every shade between deep purple and pure white. Further on the scenery becomes very wild, the deciduous trees cease, the rocks rise in jagged peaks, and the river tumbles away down impassable ravines.

"This plane-grove is the haunt of both White-winged and common Redstarts, the former being rather the more numerous. It is certainly much the shyer bird, perches high, drops suddenly down to the grass to feed, and flies up again at the slightest alarm. Such was the difficulty of getting at them that, although the wood held at least a dozen pairs, it took two guns a couple of days' stalking and lying in wait to bag three brace of this small game; and of these, four were killed by long flying-shots.

"The elevation of this locality is 2400 feet, and the time of observation 29th March to 8th April. *R. mesoleuca* occurred nowhere else in the neighbourhood of Anasclia, and was not again met with until found breeding among the cedars and junipers on the Karanfil dagh, at an elevation of at least 5000 feet. Here, on the 24th April, a pair was observed which had taken possession of an old Woodpecker's hole, about 30 feet up a dead branchless cedar. The nest was a foot lower than the entrance to it, and but just begun. Next day a nest was discovered in a natural hole, formed by the rotting away of a juniper-branch, 3 feet from the ground. It

contained six slightly incubated eggs; and shortly afterwards another sitting of three fresh eggs was taken from a hollow cedar still higher up the mountain. The birds of these last nests were shot.

"The eggs resemble those of *Ruticilla phoenicurus* so closely, that if placed side by side with them they cannot be distinguished. The nests were loosely constructed from thin strips of inner juniper-bark interwoven with tufts of black goats' hair and a little ibex wool, and were lined with more goats' hair and a few stray Partridge and other feathers.

"The song of the White-winged Redstart is clear and pretty, and is generally uttered when the bird is perched on a tree-top or on some bare projecting branch. All the males show conspicuously the white alar patch; and the females are always more sooty on the underparts than those of *R. phoenicurus*. There seems, indeed, but little doubt that its claim to distinctness as a species must hold good.

"Besides the localities mentioned, it was only once met with, and certainly did not occur in the barren interior or wooded northern districts of the country, though in the latter *R. phoenicura* was numerous enough."

Before closing the present article I must add that Mr. Gätke has lately obtained the present species in Heligoland.

The specimens figured are the adult pair above described.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a, ♂. Boydagh, Asia Minor, 1874 (*H. J. Elwes*). *b*, ♂. Anasclia, Taurus, Asia Minor, April 5th, 1876.
c, ♀. Anasclia, April 8th, 1876 (*C. G. Danford*).

E Mus. H. J. Elwes.

a, ♂. Ephesus, Asia Minor, March 18th, 1874 (*H. J. E.*).

E Mus. Berol.

a, ♂ *ad.* Djedda (*Hempr. & Ehr.*), type of the species.

E Mus. H. Seeböhm.

a, ♂. Near Smyrna, March 21st, 1872 (*Dr. Krüper*).



Hanhart imp

INDIAN REDSTART
RUTICILLA RUFIVENTRIS

RUTICILLA RUFIVENTRIS.

(INDIAN REDSTART.)

Le Traquet à cul roux, Levaill. Ois. d'Afr. iv. p. 113, pl. 188. fig. 1 (1805).

Enanthe rufiventris, Vieill. Nouv. Dict. xxi. p. 431 (1818, ex Levaill.).

Sylvia semirufa, Ehr. Symb. Phys. Aves, fol. 66 (1829).

Phænicura atrata, Jard. & Selby, Ill. Orn. pl. 86. fig. 3 (1829, nec Gm.).

Phænicura nipalensis, var. *atrata*, Hodgs. in Gray's Zool. Misc. p. 83 (1844).

Ruticilla indica, Blyth, Cat. Birds, Mus. As. Soc. p. 168 (1849).

Ruticilla phænicuroides, Moore, Proc. Zool. Soc. 1854, p. 25, pl. lvii.

Ruticilla nipalensis (Hodgs.), Moore, Proc. Zool. Soc. 1854, p. 26.

Ruticilla semirufa (Ehr.), Licht. Nomencl. Avium, p. 28 (1854).

Ruticilla atrata, Licht. ut suprâ (1854, nec Gm.).

Ruticilla rufiventris (Vieill.), Jerdon, B. of India, ii. p. 137 (1863).

Ruticilla erythroprocta, Severtz. Turk. Jevotnie, p. 65 (1873, nec Gould).

Figuræ notabiles.

Levaill. *l. c.* ; Jard. & Selby, *l. c.*

♂ *ad. ptil. æst.* pileo saturatè schistaceo-cinereo : capitis lateribus, collo toto, gutture, pectore, dorso et tectricibus alarum nitidè nigris : remigibus sordidè nigris vix cinereo marginatis : uropygio, rectricibus (centralibus exceptis), abdomine et corpore subtùs cinnamomeo-rufis : rectricibus centralibus ad basin rufis et in parte reliquâ saturatè rufescenti-fuscis : rostro et pedibus nigris : iride fuscâ.

♂ *ptil. hiem.* pileo sordidiore, dorso et collo postico cinereis vix fusco tinctis : remigibus et tectricibus alarum pallidè cinereo marginatis : caudâ et uropygio vix sordidioribus.

♀ *ad.* pileo, nuchâ, capitis lateribus et dorso fusco-cinereis, alis saturatè fuscis albo-cinereo et albo-fusco marginatis : uropygio et caudâ sicut in mare picturatis sed sordidioribus : gulâ et pectore pallidè fusco-cinereis, corpore reliquo subtùs albido-cinereo, subcaudalibus pallidè aurantiaco-cinnamomeis.

Adult Male in spring (Lebanon, 16th June). Crown deep slate-grey slightly marked with black ; back, wing-coverts, sides of the head, throat, neck, and breast deep glossy black ; quills dull black, with faint traces of grey edgings ; rump and entire underparts below the breast rich cinnamon rufous ; tail deep cinnamon rufous, except the central rectrices, which are dark reddish brown, except at the base ; bill and legs black ; iris dark brown. Total length about 5·5–6·0 inches, culmen 0·58, wing 3·15, tail 2·7, tarsus 0·95.

Adult Male in winter (Lahore, November). Differs from the male in summer dress in having the feathers on the back and wing-coverts edged with greyish ; the grey on the head is duller ; and the quills have tolerably broad brownish grey margins.

Adult Female (Karakash valley). Crown, nape, sides of the head, and back greyish brown ; wings dark

brown, with whitish grey and brownish grey margins; tail and rump as in the male, but duller; throat and breast pale brownish ash-grey, fading into whitish grey with a reddish tinge on the abdomen; under tail-coverts pale cinnamon-orange.

Young Female (Ladak, August). Upper parts darker than in the adult female, with indistinct markings; margins to the wing-feathers pale reddish brown; underparts duller than in the adult, the margins to the feathers on the throat and breast darker, giving these parts a peculiar mottled appearance.

THIS, the common Indian Redstart, is only found in the Western Palæarctic Region in the extreme east, having been met with by Canon Tristram in Palestine, within view of the Mediterranean; but in Asia it is found throughout India, eastward into Mongolia and China, and southward to the extreme southern portion of the mainland; but it has not been recorded from Ceylon.

Canon Tristram, in his notes on the ornithology of Palestine (Ibis, 1867, p. 87), writes that there it is most restricted in its range, occurring only on the higher slopes of Hermon and Lebanon. "On the former mountain it is scarce; and though we saw two specimens, we were unable to secure them; and our first captures were in June on ascending to Ainât from the plain of Cœle Syria, where it was plentiful in the stunted oak-groves. While shy and wary, the male bird is too striking in appearance easily to elude observation; and its restlessness, cheerful and varied note, and habit of perching on an exposed bough or stone, expanding and jerking its bright cinnamon tail, soon betray its presence. Though its range is so extremely limited, yet in the Lebanon district it frequents all kind of ground alike—both the naked cliffs and summits of the range, the woods, and especially cedar-groves, and not less the mulberry-plantations of the villages. At the famous Cedars it was very abundant, and we saw at least fifty scattered about there. Its song resounded from the lower boughs of the old patriarchs; but after expanding its tail for a few seconds, it always changed its perch and flitted on, sometimes going into the open, perching like a Rock-Chat on a boulder, and then dropping out of sight on the other side. . . . Whether this species is sedentary or not we have not ascertained; but if it be not merely a summer visitor, it is remarkably late in nesting; for on the 26th June, on going down from the Cedars to Meiruba, we took a nest with four eggs not very hard-set, having caught the bird with the hand, as she remained under the little crevice in the rock where the eggs were deposited in a slightly built nest. It was on the ground, on the side of a precipitous hill. On the preceding day we had obtained two nests of *Emberiza cia*—not a bad capture so late in the year; and the final close of our nesting-season was on the 26th June, when descending the Lebanon, with the glorious view of the Mediterranean, on which we were soon to embark, just opening before us. The colophon of my egg-book for 1864 is, 'Nest of 4 eggs, *Ruticilla semirufa*, ♀ caught on nest. Eggs not before known.' I may add that they are like those of our common Redstart, but of a more delicate and paler blue." The present species was obtained in Egypt by Hemprich and Ehrenberg, but not by any recent collectors; and these gentlemen also met with it in Syria. Dr. Severtzoff records it (*l. c.*), under the name of *Ruticilla erythroprocta*, as breeding in Turkestan, and informs me that he has compared his specimens with those in the Berlin Museum, collected by Hemprich and Ehrenberg, and has convinced himself that they are specifically identical. Mr. Blanford obtained it in South-eastern Persia, Baluchistan, and Sindh; and,

referring to the examples obtained there, he writes (E. Pers. ii. p. 166) as follows:—"One of the specimens which I refer to *Ruticilla rufiventris*, the male bird from Píshín, in Balúchistan, shot on February the 8th, presents the peculiarity of a narrow white frontal band above the usual black forehead, thus resembling *Ruticilla phænicura*, except that the white band is usually much broader in that species. In other respects this specimen agrees with *Ruticilla rufiventris*, being a larger bird, with longer bill and tarsi than *Ruticilla phænicura*, and having more black on the breast. I am disposed to look upon the white upper forehead as a mere individual variation; but the late Mr. Blyth informed me that he had seen similar specimens in India; and they may belong to a peculiar and undescribed race, or possibly be hybrids between *Ruticilla rufiventris* and *Ruticilla phænicura*. From the localities above quoted as those at which the specimens were collected, it will be seen that none were obtained on the Persian plateau; and hitherto there is no evidence, so far as I am aware, of the occurrence of *Ruticilla rufiventris* in Persia proper. It may traverse the country in spring and autumn, and breed further north; but neither De Filippi, Major St. John, nor I observed it."

Mr. A. O. Hume writes (Stray Feathers, i. p. 190) that in Sindh he found it common everywhere, at times even in the most desolate localities, throughout all the districts and provinces he traversed. It is also recorded (Stray Feathers, ii. p. 413) as common in Chota Nagpur; and Dr. Jerdon writes (B. of India, ii. p. 138) as follows:—"The Indian Redstart is very regular in its appearance in the plains of India, from the end of September to the first week or so of October, according to the locality. It is generally spread throughout the country, to the extreme south of the peninsula, but has not been observed in Ceylon—frequenting groves of trees, orchards, gardens, and the vicinity of old buildings, walls, and houses; and it is often seen perched on the roof of a house. It feeds on the ground, on various insects. It has a most peculiar quivering motion of its tail, especially when seating itself on its perch after feeding; hence some of the native names."

To the eastward the present species occurs as far as China; but it has not, Captain Wardlaw Ramsay informs me, been met with in Burmah. Père David states (Ois. de la Chine, p. 169), it "arrives in small numbers to pass the summer in China and Mongolia. I obtained several individuals near Peking, on the Ourato Mountains, and in Southern Chensi, but have never observed it in Eastern China." Respecting its occurrence in Mongolia, Colonel Prjevalsky writes (Rowley's Orn. Misc. pt. vi. p. 174) as follows:—"We obtained specimens in S.E. Mongolia only in the Suma-had and Shara-had Mountains; and even in these localities it appears to be scarce, inhabiting the bushes that grow near rocks and in clefts. In Ala-shan we found it breeding. In Kansu we did not observe a single specimen during the summer of 1872, but next spring noticed the first migrants on the 4th of April, at the sources of the Tetung-gol, where they kept to the small bushes singly and in pairs. Strange to say, we did not find one in April and May along the Tetung-gol, and therefore cannot say whether it breeds there or not."

In habits the present species is said to resemble our European Black Redstart more than the common Redstart; and it evinces a preference for rocky and mountainous localities. The Indian ornithologists give very meagre notes respecting its habits; and I find but little on record on the subject, except Père David's statement (*l. c.*) that it appears to avoid the forests, and resorts in preference to the mountains, where it occurs in rocky places, or near old walls,

feeding on insects; and in general, he adds, its habits are similar to those of the Black Redstart.

This Redstart does not breed on the plains of India; and but little is known about its breeding-habits beyond what is cited above from Canon Tristram's notes. Mr. A. O. Hume, in his 'Nests and Eggs of Indian Birds,' p. 321, writes as follows:—"Dr. Stoliczka tells me that he saw four eggs of this species at the camping-ground of Lama Yuroo, in the valley of the Ysarap, in Rupshu, at an elevation of about 13,000 feet. They were a little larger, and their uniform sky-blue colour was a little paler than that of the eggs of the common European Redstart." He further adds that Colonel Sykes, who spoke of a pair as having nested in an outhouse on the plains of India (P. Z. S. 1832, p. 92), must have made a mistake, as the present species is absolutely a winter and spring visitant, never breeding there.

I quite agree with Mr. Blanford (E. Pers. ii. p. 164) that *Ruticilla phœnicuroides* of Moore is referable to the present species, and that *Ruticilla erythroprocta*, Gould (P. Z. S. 1855, p. 78), should be treated as distinct; but I cannot agree with him in separating *Ruticilla semirufa*; for since I have examined a large series I have convinced myself that the difference in size is not a character that holds good, and that all that can be said is that Palestine examples are, on the average, a trifle smaller in size than most of those from India.

The specimens figured are an adult male, in spring dress, from Maunbhoom, and a female from Palestine.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a, ♂. Lahore, November (*Marshall*). *b*, ♀ *ad.* Karakash valley (*Biddulph*). *c*, ♀ *juv.* Dras Ladak, August 1873 (*Biddulph*). *d*, ♂ *ad.* Maunbhoom, April 1864.

E Mus. Lord Tweeddale.

a, ♂, *b*, ♀. Deyrah (*Biddulph*). *c*, ♀. Ladakh, September 1867 (*Jerdon*). *c*, ♀. Maunbhoom, April 1864 (*Beavan*). *d*, *e*, *f*, ♀, *g*, ♂ *juv.* Umballah, November 1866 (*Beavan*).

E Mus. Berol.

a, ♂. Egypt. *b*, ♂. Lebanon. *c*, ♂, *d*, ♀. Syria (*Hempr. & Ehr.*).

E Mus. Ind. Reg.

a, ♂. Karáchi, Sindh. *b*, ♂. Ghistigan, Baluchistan. *c*, ♀. Pishin, Baluchistan. *d*, ♂. Near Ram, South-east Persia (*W. T. Blanford*).

E Mus. H. B. Tristram.

a, ♂. Lebanon, June 16th, 1864. *b*, ♀. With nest and three eggs, Lebanon, June 20th, 1864. *c*, *d*, *juv.* Lebanon, June 15th, 1864 (*H. B. T.*).



BLACK REDSTART
RUTICILLA TITYS

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(BLACK REDSTART.)

- The Grey Redstart*, Edw. Nat. Hist. p. 29, pl. 29 (1741).
Sylvia tithys, Scop. Ann. i. Hist. Nat. p. 157. no. 233 (1769).
Black Redtail, Lath. Syn. ii. p. 426. no. 16 (1783).
Motacilla gibraltariensis, Gm. Syst. Nat. i. p. 987 (1788, ex Edw.).
Motacilla atrata, Gm. tom. cit. p. 988 (1788, ex Lath.).
Motacilla erythrorus, Rafin. Caratt. p. 6 (1810).
Saxicola tithys (Scop.), Koch, Baier. Zool. i. p. 186 (1816).
Sylvia tites, β . *campylonyx*, Ehr. Symb. Phys. fol. dd (1829).
Ruticilla atra, C. L. Brehm, Vög. Deutschl. p. 365 (1831).
Ruticilla tithys (Scop.), C. L. Brehm, tom. cit. p. 365 (1831).
Ruticilla atrata, C. L. Brehm, tom. cit. p. 366 (1831).
Ruticilla gibraltariensis, C. L. Brehm, tom. cit. p. 366 (1831).
Phœnicura tethys, Jardine & Selby, Ill. Orn. pl. 86. figs. 1, 2 (1840).
Lusciola tithys (Scop.), Schl. Rev. Crit. p. 31 (1844).
Ruticilla cairii, Gerbe, Dict. Univ. d'Hist. Nat. xi. p. 259 (1848).
Erythacus tithys (Scop.), Degl. Orn. Eur. i. p. 504 (1849).
Erythacus cairii (Gerbe), Degl. tom. cit. p. 507 (1849).
Lusciola thytis, Schleg. Vog. van Nederl. p. 156 (1854).
Ruticilla montana, L. Brehm, Naumannia, 1855, p. 281.

Rouge-queue Tithys, French; *Hausrothschwanz*, *Hausröthling*, German; *Rabiruiva*, Portuguese; *Colirojo*, Spanish; *Codiroso spazzacamino*, Italian; *Cudiross isued*, Maltese; *de zwaarte Roodstaart*, Dutch; *Sortbrjstet Sanger*, Danish; *Svartrödstjertsångare*, Swedish.

Figuræ notabiles.

Edwards, *l. c.*; Werner, Atlas, *Insectivores*, pl. 50; Kjær. Orn. Dan. taf. 54. fig. 7, and suppl. taf. 8; Fritsch, Vög. Eur. taf. 23. figs. 13, 14; Naumann, Vög. Deutschl. taf. 79. figs. 3, 4; Sundevall, Sv. Fogl. pl. 66. figs. 1, 2; Gould, B. of Eur. pl. 96; id. B. of G. B. ii. pl. lii.; Schlegel, Vog. Nederl. pl. 84; Roux, Orn. Prov. pl. 208; Bettoni, Ucc. Lomb. tav. 46.

♂ *ad.* fronte nigrâ, capite summo, nuchâ et dorso cum scapularibus saturatè grisescenti-schistaceis, dorso centraliter nigricante notato: remigibus nigricantibus, primariis extûs vix albicante marginatis, secundariis in pogonio externo conspicuè albo marginatis speculum formantibus: rectricibus centralibus rufescenti-brunneis, reliquis cum supracaudalibus ferrugineis: facie laterali, gulâ, gutture et pectore nigris, pectore imo et abdomine pallidè cinereis, subcaudalibus pallidè lutescenti-ferrugineis: rostro et pedibus nigris: iride fuscâ.

♀ *ad.* corpore suprâ et subtus brunnescenti-fuliginoso: remigibus nigricantibus, extûs brunnescente albido marginatis et eodem colore vix apicatis: tectricibus alarum nigricantibus, pallidè brunneo marginatis: caudâ ut in mare, sed sordidiore, supracaudalibus sordidè ferrugineis: abdomine pallidiore: subcaudalibus flavicanti-ferrugineis: rostro et pedibus nigris: iride fuscâ.

Adult Male (Southern France, May). Crown, except a narrow black frontal line, nape, back, and scapulars dark slate-grey, deepening into black on the centre of the back, and becoming paler towards the rump; quills blackish, primaries narrowly and secondaries broadly edged with white on the outer web, this border being broader towards the base of the feather; wing-coverts black, edged with grey; upper tail-coverts and tail, excepting the central rectrices, which are dark reddish brown, fox-red, most of the tail-feathers being tipped with brown; a narrow frontal line, lores, sides of the head and neck, throat, and entire breast jet-black; lower part of the breast and flanks pale slate-grey; centre of the abdomen almost white; under tail-coverts pale yellowish rust-coloured; bill and legs black; iris brown. Total length about 5-7 inches, culmen 0.6, wing 3.55, tail 2.8, tarsus 0.95.

Adult Female (Plymouth.) Upper parts brownish grey, with a sooty tinge; underparts dull pale sooty brown, becoming whitish on the centre of the abdomen; quills and wing-coverts blackish brown on the outer web, bordered with brownish white and narrowly tipped with the same colour; upper tail-coverts dull fox-red; under tail-coverts and tail as in the male.

Young, fresh fledged (Altenkirchen). Resembles the female, but is much paler, browner, and duller in colour.

Nestling, ♂ (Altenkirchen, 21st May). Upper parts dull sooty blackish grey, indistinctly marked with pale brown; rump and upper tail-coverts orange-red, narrowly barred with dark brown; the very short stumpy tail dark reddish brown, marked with dark brown; wings blackish, the feathers margined with dull reddish brown; throat, breast, and flanks sooty grey, indistinctly marked with yellowish brown; lower part of the abdomen dull yellowish, narrowly marked with greyish brown; bill yellowish brown, gape yellow; legs light brown.

Obs. A breeding female from Altenkirchen is rather duller in colour, and has the plumage more worn than the female from Plymouth above described; and a young female from the same locality is very much browner in general tone of coloration. The young male resembles the adult female, but is altogether grey in tinge, and has the tail of a much brighter hue. Mr. Gatcombe writes that the adult male in winter does not lose the black breast and white patch on the wing at any season after having once attained them; and the only difference between the winter and the summer dress is that in the former the black feathers are tipped more or less with grey, which wears off in the spring; and he further states that he has seen old males throughout the winter with nearly pure black breasts and otherwise in magnificent plumage.

THE Black Redstart inhabits Central and Southern Europe, being only rare in the northern portions of the continent, and ranging eastward into Persia, and southward into Northern Africa.

In Great Britain the present species occurs most frequently during the autumn and winter season. According to Professor Newton (Yarrell's Brit. B. part v. p. 333) it "was first made known as an occasional visitor by Mr. Gould, who recorded (Zool. Journ. v. p. 103) the capture of a specimen by Mr. Bond at Kilburn, near London, October 25th, 1829; and another example

was afterwards seen in the Regent's Park. In 1830 two more specimens were obtained, one at Bristol, the other at Brighton. In January 1833 a fifth occurred at Teignmouth; and in December 1835 one was shot near Bristol. Since then the recorded occurrences have become almost innumerable, and the bird is now to be considered a regular winter visitant to most of the south-western counties—certain localities on the coasts of the Isle of Wight, Devon, Cornwall, and Pembrokeshire being hardly ever untenanted at that season. To the eastward it is less common; but it has occurred many times in Sussex, and more or less often in Kent, Suffolk, and Norfolk—almost always near the sea. Further inland it has been observed as a straggler in Berkshire, Oxfordshire, and Derbyshire, and so far to the northward as near Liverpool. Bellamy, in 1839, said it had been known to breed at Exeter; and there is some reason to think that it did so in 1852 at Rongdon, in Staffordshire, as recorded by the late Mr. R. W. Hawkins (Zool. p. 3503); for the appearance of the eggs, then taken, satisfied the scruples of Mr. Hewitson (Eggs Br. B. ed. 3, p. 106). Mr. Sterland also, in the 'Birds of Sherwood Forest' (pp. 67, 68), mentions nests found in 1854 and 1856 near Ollerton, in Nottinghamshire, which he believes were those of this species; and one of the eggs he took and kindly sent to the Editor seems to confirm the supposition. Mr. Gray, too, states that he was informed by Mr. George Kirkpatrick that in 1858 he found a nest and eggs at Duncow, near Dumfries, which he could not make out to belong to any other than this species. In Scotland, however, the Black Redstart is a rare bird. Mr. Gray mentions only three cases in which it has occurred as a visitor:—some twenty years since in Caithness; at Cullen, in Banffshire, in 1857; and at Kirkwall, in Orkney, in 1857: but Dr. Gordon informs the Editor of its having been found near Elgin in one or two instances.

"Though, as already stated, the specimen obtained in 1829 was the first to make the species known as British, Thompson says that, so early as 1818, Mr. Ball saw it about Youghal, in Ireland, and in the course of that and the next few years ten examples were seen, of which five were killed in one autumn. Thompson further mentions its occurrence more recently in the same locality, as well as in others on the west coast, and the capture of one on board ship between Glasgow and Belfast. In 1855 Mr. Bilson told the Editor of one obtained in Galway; and Mr. Blake-Knox, who has recorded the appearance of several examples near Dublin, kindly furnishes the information that it comes every winter to that part of Ireland, sometimes in companies of from five to twenty, and that he has seen ten or more together catching flies against a sunny wall."

To the above notes I may add that Mr. Cecil Smith, writing from Somersetshire, informs me that it "is not common, but has been occasionally obtained in this county. I have a fine male which was shot at a place called Galmington, close to Taunton; with this exception, all the specimens I have seen or heard of in the county occurred on or near the coast.

"In Guernsey the Black Redstart seems more common than in England, even than in Devonshire, which county appears especially favoured by it. When in Guernsey, in October and November 1871, I saw several Black Redstarts, and, as I did not want specimens, I took the opportunity of watching them: they usually frequented the low part of the island, known as the vale, especially from Cobo to Lancresse Bays: they appeared to me more to take the place of the Wheatear than of the common Redstart, both as to locality and habits. The part I found them in is a favourite locality of the Wheatear during the summer; it consists almost

entirely of sheep-walk and barren granite rocks, a few low stone walls, and the roughest and wildest of rocky beaches, not in the least resembling the orchards, gardens, and hedgerows one usually associates with the common Redstart. In manners, too, the Black Redstart much resembles the Wheatear, flitting from one mole-hill or big stone to another, or taking an occasional look at the intruder from the top of a low stone wall; in the peculiar quiver of its tail, however, it much resembles the common Redstart. I did not find it very shy, as it allowed a tolerably close approach, certainly rather more so than the Wheatear would have done." Herr Preyer believes he saw one in Iceland in June 1860; and, according to Captain Feilden (B. of Fær. Isl. p. 7), one was observed by Mr. H. C. Müller on the 12th May, 1870, in the garden of Governor Finden, in Thorshavn, on the Færoes. It has once been obtained in Norway, a female having been shot by Mr. Collett near Christiania in April 1864, which is now in the University Museum of that town; and it has occurred several times in Sweden. According to Sundevall one was seen at Örebro, in June 1857, by Mr. C. G. Löwenhjelm, and a young male was shot by Mr. Meves at Stockholm on the 9th September, 1854, and is now in the Museum of that town. It has not been recorded from Finland; but my friend Mr. Sabanäeff informs me that it has once been obtained near Moscow in the spring, and that, according to Daniloff, it breeds in the Government of Orloff; in that of Kieff it occurs only during migration; and Eversmann records it as not uncommon at the mouth of the Urta and near the Mertvey Kultuk. Pallas observed it at Simbirsk, on the Volga; and Jacovleff says that it is common enough on the Volga steppes, but he never observed it at Astrachan. In the Baltic provinces and Eastern Germany it appears to be rare. Schauer observed it on the Tatra at an altitude of 6000 feet. Borggreve states that formerly it used to be much rarer in Eastern Germany than it now is. It is much commoner in Western Germany. I never recollect seeing it in Holstein, but found it extremely numerous on the Rhine. Kjærbølling (Danm. Fugl. p. 179) says that it is "rare in Holstein, commoner in Lauenburg;" and Mr. Bonnez records it as occurring, but rare, near Greenaa. I frequently observed it in Belgium, where it is said to be tolerably common; and Schlegel says that it breeds in Holland, at Nymegen, Arnhem, Zutphen, Breda, &c. In Northern France it arrives in April and leaves again in October, and, according to Degland and Gerbe, is found in many parts of France, being sedentary in Lorraine, Burgundy, the Basses-Alpes, and Provence. In Portugal, it is said by Professor Barboza du Bocage to be common; but Dr. E. Rey only once observed it in that country, and believes it to be rather rare than otherwise. The Rev. A. C. Smith, however, found it very common, and frequently observed it in the crowded town of Lisbon. Lord Lilford, Col. Irby, and Mr. Howard Saunders all agree in stating that it is common in Spain during the winter; Col. Irby (Ibis, 1872, p. 200) says that it nests in the vicinity of Gibraltar; and Mr. Howard Saunders speaks of it as being abundant everywhere in Southern Spain, frequenting the towns and villages in the autumn and winter, but nesting in the hills and broken ground. Mr. A. von Homeyer met with it in the Balearic Isles during the breeding-season.

Passing eastward, again, I find it recorded by Bailly as a common summer resident in Savoy, frequenting the mountains. He divides it into two species, *R. titys* and *R. cairii*; but subsequent investigation has proved that there is but the one (the present) species, *R. cairii* having been founded on the young plumage in which it has been known to breed. It arrives

in Savoy in March, and leaves again about the middle of September. In Italy, according to Salvadori, it breeds in the mountains, and in the autumn migrates, some few remaining in the lowlands; and many are offered for sale during the winter in the markets of Pisa and Florence. Mr. A. B. Brooke found it not uncommon in Sardinia, but does not think that it remains to breed in the south of Sardinia. Mr. C. A. Wright says that it occurs on the island of Malta in the spring and autumn, but is not so common as the common Redstart. He occasionally saw it when the winter was far advanced. Lord Lilford found it common in Corfu and Epirus in winter, and says that a few remain there to breed. Lindermayer and Von der Mühle both state that it is resident in Greece; and the latter says that it breeds in Rumelia and the Maina. In Southern Germany it is tolerably common in some parts and rare in others. Mr. Stejneger says that it occasionally winters in Southern Tyrol; but in Styria it is a summer visitant, arriving in March and leaving in the late autumn, being rather rare than common. The Ritter von Tschusi Schmidhofen says that it is common in Lower Austria till the end of September, and he saw one as late as the 20th October. It occurs in Turkey and in Southern Russia. Professor von Nordmann says that it breeds in the mountains of Ghouriel, Abasia, and the Crimea. On the autumn migration he observed it on several occasions near Odessa, and once near Theodosia, in the Crimea. Ménétries says that he obtained it near Zouvant, on the mountains of Talyche in the Caucasus, at an altitude of 10,000 feet; Strickland observed it near Smyrna, in Asia Minor; and Canon Tristram writes (*Ibis*, 1867, p. 86) that it is "common throughout the year in the rocky hills of Palestine. In winter it is the commonest and most conspicuous bird in these dreary ranges, and especially affects the sea-coast, as near the Ladder of Tyre. It is partially migratory, ascending in spring to the spurs of Lebanon and the sides of the Hermon, very few remaining south to breed." It occurs in North-east Africa; but Captain Shelley never saw it. According to Von Heuglin (*Orn. N.-O. Afr.* p. 334), however, it is not very common in North-eastern Africa in the winter, and does not travel so far southward as *R. phœnicurus*, but is plentiful in Southern Nubia in September. Mr. S. Stafford Allen (*Ibis*, 1864, p. 237) observes that it arrives from its southern winter quarters in April; while Mr. E. C. Taylor (*Ibis*, 1867, p. 61) says that it is "resident in small numbers throughout the winter, frequenting ruined buildings." In North-western Africa it is not uncommon. Mr. O. Salvin (*Ibis*, 1859, p. 308) says that it is "not an uncommon bird near Tunis and many of the villages of the Regency; but it would appear to be more rare in the mountainous districts, as I have no note entered of having observed it." Mr. Tyrwhitt Drake saw it at Tetuan; Mr. J. H. Gurney, jun., met with it at Algiers and Blidah; and Mr. Taczanowski found it everywhere in the mountains of Algeria as far as the desert. It is, I may add, said to breed in Algeria.

To the eastward it occurs at least as far as Persia. De Filippi obtained it at Demavend, north-east of Tehran; and Mr. Blanford has lent me a specimen obtained by him in that country.

In its habits the present species much resembles the common Redstart, but it frequents inhabited places much more than that species. In spite, however, of its love of such breeding-localities as are in the middle of towns or villages, it is on the whole a cautious and shy bird. Lately when at Altenkirchen, near Coblenz, I frequently saw it, and daily watched a pair which had young, the nest being placed on a beam in a partly finished house. When I first found the

nest the young were naked, with only a little blackish down on the head; but in ten days' time they were covered with feathers. I sat down close to the building to watch the old birds; but for some time they kept away, every now and then flying near and uttering their harsh alarm-note. At last the female approached, carrying a large worm, and, after passing and repassing several times, flew up to the nest. Both male and female assisted in feeding the young; but the former was much more cautious than the latter, and generally transferred what he brought to the female, who took it to the nest, whilst he went out foraging again. In its movements the present bird is exceedingly sprightly and active, reminding one somewhat of the Robin. When sitting it holds itself erect, every now and then giving its tail a slight flirt. Its call-note and song very closely resemble those of the common Redstart; but any one who knows the note of each species well can distinguish them.

Throughout almost the whole of Central and Northern Europe, as well as South-eastern Europe, the Black Redstart is a summer resident, arriving in the spring and leaving in the late autumn; but, curiously enough, it is a winter visitant to us in Great Britain.

Mr. J. Gatcombe, who for long has carefully noted the various instances of its occurrence in the neighbourhood of Plymouth, writes to me that "Black Redstarts are regular winter visitors to the coasts of Devon and Cornwall, arriving (generally) the first week in November, and departing at the end of March or beginning of April, although on one occasion I observed them so early as the last week in October. They frequent the rocks along the coast above high-water mark, now and then hopping and flitting from place to place on the grassy slopes on the summit of the cliffs, and taking short excursions in the air in pursuit of various insects, which they catch with marvellous dexterity—then, making for a stone, turf, bank, or any eminence on which to alight, will, after the characteristic sudden dip of the body and jerk or shake of the tail (the lateral feathers of which are slightly expanded), be off again in an instant. Many of their actions also bear a strong resemblance to those of both the Wheatear and Robin. Quarries in the vicinity of the sea, ramparts of fortresses, garden-walls, and stone buildings of any kind appear attractive to them. They may also be seen on church-towers and in churchyards flitting about on the tombstones, from which they make frequent sallies into the air after flies in the manner of the Flycatcher. I once took from the gullet of one a kind of marine crustacean, about an inch long, called *Ligia oceanica*, in form resembling an immense 'woodlouse,' and which may so often be seen running about on rocks and walls close to the sea. They are also partial to the vicinity of old stone arches and caverns, in which they will immediately hide when pursued, and remain concealed for a length of time—or, if wounded, will make for the first hole, crevice, or any place of concealment, be it ever so small. The old Black Redstarts I have generally found to be exceedingly shy and wary; but the young are more easily shot: however, both will sometimes lead you a 'pretty dance' over rugged rocks and precipitous cliffs; and the cunning they display in trying to evade pursuit is quite wonderful. After pursuing one for miles over the rocks, on the tops of which it would only for an instant alight, I have known it to suddenly hide, and, allowing me to pass on out of sight, would then double back to the same locality from which it was at first disturbed. Thus in this fatiguing chase have I been led backwards and forwards for hours together, and ultimately obliged to give in. They occasionally perch on bushes; and I have, in some instances, known them to hide in thickets or brakes on the faces of

the cliffs when closely pursued; but otherwise they show a most decided preference for rocks and stones. In Switzerland, too, I have often remarked them on bushes or shrubs, both in the valleys and on the mountain-sides. These birds seem to come over to us both singly and in small flocks or flights; for I have sometimes observed as many as twelve or fourteen flitting about near the same place on the first morning of their arrival; but generally only one or two are at first seen. Should several appear in one locality they soon disperse to different quarters; but I have remarked that a favourite haunt is seldom without its Redstart during the winter, and should that be killed another generally takes its place. Although active, watchful, shy, and suspicious, these birds (at least the younger ones) appear to be easily trapped; for I have on two or three occasions obtained them with their wings and tails clipped (apparently with a pair of scissors), and in one instance I shot one with its tail cut short and a piece of red worsted tied round its leg. They are also sometimes caught with bird-lime. Most of the birds which visit our coast are the young of the year, in the proportion of full twenty in the plain brownish grey dress (and a few with the black on the throat just appearing) to one with the black breast and white patch on the wing. And the same scarcity of old males, too, seems to prevail in the Continental markets; for among the many I have examined from time to time during the autumn exposed for sale on the stalls, only one old male could I detect. In the progress towards maturity the plumage of the male Black Redstart varies considerably. I have obtained them with the dark feathers on the breast only just beginning to show, then with tolerably fine black breasts and no white on the wings, then again, on one occasion, with the white pretty strong and not a sign of black on the breast. This latter plumage is, I should think, but rarely seen, and seems to me very strange, as the black almost invariably appears before the white. I believe that the winter plumage of the fully adult male Black Redstart really differs but little from that of summer; the only difference is that in winter the feathers of the body, being longer and more or less tipped with grey or brownish grey, give to the general plumage a duller cast; but these tips becoming abraded or worn off towards the summer (as in the case of many other small birds), leave the under plumage of course more pure and distinct. Nevertheless I have seen a few splendid old males at different times throughout the winter, with almost pure black breasts and a large white patch on the wing; indeed the white on the wing is then even more conspicuous than in the breeding-season, for by that time the edges of the feathers have become comparatively short and much abraded. I have never yet met with a Redstart in the pure grey plumage, said by some to be observable in the so-called *Sylvia cairii*, although I have no doubt that, on the abrasion or wearing off of the brownish grey tips of the plumage of both the adult female and immature Black Redstart, the under tints would in the breeding-season appear much more pure. I myself have never met with an instance of the Black Redstart remaining on our coast during the summer; but I have no doubt that the common Redstart has in some cases been mistaken for it. On the other hand, however, I am perfectly certain that early arrivals of the Black Redstart on the coast have been repeatedly mistaken for late stragglers of the common species."

The Black Redstart breeds numerously throughout Central and most parts of Southern Europe, usually placing its nest in an old wall or in a building of some sort, most frequently close to human habitations; but in the mountains where it breeds, far from inhabited places, it selects holes in the lofty cliffs. Most of the nests I have seen were placed in holes in the walls

of barns or outhouses, or under the eaves, or else on a convenient beam. The nest itself is constructed of dried grasses intermixed with fine roots, and lined with hair and wool or a few feathers, is usually somewhat bulky, but is tolerably neatly constructed. The number of eggs is usually from four to five; they are almost always pure white in colour, sometimes with a faint bluish green tinge; and I have seen five eggs in the possession of Mr. Sachse, taken by him at Altenkirchen on the 5th May, 1873, which are minutely spotted with brown, three of them having a distinct zone of spots round the larger end. Mr. Pässler also states (J. f. O. 1859, p. 100) that he found a clutch of eggs similarly coloured. Mr. Carl Sachse informs me that "near Altenkirchen it breeds numerous, almost invariably nesting in or near buildings, or in the walls round them, and always raises two broods in the season. In 1862 a pair built under a waggon at the railway station of Au, on the Deutz railway, near here; and although the waggon was used daily to fetch goods from the goods station, about 250 yards distant, they brought up their brood in safety. For years a pair have nested in my house; and I have had abundant opportunities of watching them, and observed that when the old birds carried the droppings of their young from their nests they flew 70 to 80 paces before dropping them. A nest which is placed on a covered balcony is at least 30 centimetres high, as the birds have added to it every year. It is, however, never used for the second brood." He further informs me that he once knew it to breed four times in one season. After the first brood had flown he took two clutches of eggs, four in each clutch; and the female again laid, hatched and reared her young successfully. He remarks that it has a peculiar predilection for a new building, and so soon as one is erected a pair of Black Redstarts are sure to enter into possession of the most convenient cranny or nook. Mr. Sachse says that he has taken eggs from the 26th of April to the 5th of June. I have several clutches of eggs taken by him, and several from Eastern Germany, all of which are pure white in colour, and in size measure from $\frac{2.9}{40}$ by $\frac{2.2}{40}$ to $\frac{3}{4}$ by $\frac{2.3}{40}$ inch.

The specimens figured are an adult male and an adult female, they being those described, full particulars as to locality being given above.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a, ♀. Plymouth 1869 (*J. Gatcombe*). *b*, ♂. South France, May 1868 (*Fairmaire*). *c*, ♂, *d*, ♂, *e*, ♀. Altenkirchen, Rhenish Prussia (*C. Sachse*). *f*, ♀. Silesia (*Möschler*). *g*, ♂. Biskra, Algeria (*Verreaux*). *h*, ♀. Buyukdere, Turkey, November 6th, 1871 (*Robson*). *i*, juv., *k*, juv. Altenkirchen (*C. Sachse*). *l*, pullus. Altenkirchen, May 21st, 1874 (*H. E. D.*). *m*, juv. Westphalia (*Schlüter*).

E Mus. Berol.

a, juv. Nubia (*Hemprich & Ehrenberg*).

E Mus. Ind. Calc.

a, ♂. Khisht, 1800 feet high, January 1870 (*W. T. Blanford*).

E Mus. Howard Saunders.

a, *b*, ♂. Savoy. *c*, ♀. Usen. *d*, *e*, ♂ (March); *f*, ♂ (September); *g*, ♀ (January). Malaga (*H. S.*). *h*, ♂ juv. Seville, January 28th. *i*, ♂. Tangier.



MOUSSIER'S REDSTART.

RUTICILLA MOUSSIERI

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RUTICILLA MOUSSIERI.

(MOUSSIER'S REDSTART.)

Erithacus moussieri, L., Olph-Gall. Ann. Soc. d'Agr. & Hist. Nat. de Lyon, iv. pl. 11 (1852);

id. Naumannia, 1852, pt. iii. p. 68, & pl. 3.

Pratincola moussieri (Olph-Gall.), Bald. Journ. f. Orn. 1853, extra heft, p. 7.

Ruticilla moussieri (Olph-Gall.), Bp. Compt. Rend. xxxviii. p. 8 (1854).

Zinzukh, Arabic.

Figuræ notabiles.

Olph-Galliard, *l. c.*; Tristram, Ibis, 1860, pl. xi.

♂ *ad.* capite suprâ et lateraliter, collo et dorso nigris, fronte et lineâ supra oculos ad nucham et plagâ laterali utrinque ad dorsum niveis: remigibus brunnescenti-nigris, secundariis ad basin in pogonio externo albis speculum formantibus: caudâ rufescenti-aurantiâ, rectricibus centralibus rufescenti-brunneis, subtus rufescenti-aurantiacis, versûs crissum pallidiore: abdomine centrali albicanti-cervino: rostro et pedibus nigris: iride brunneâ.

♀ *ad.* mari dissimilis, suprâ grisescenti-brunnea, subtus sordidè grisescenti-ferruginea: remigibus saturatè brunneis vix grisescente brunneo marginatis: caudâ ut in mari, sed saturatiore: uropygio ferrugineo lavato: supracaudalibus rufescenti-aurantiacis.

♂ *ptil. hiem.* ut in ptilosi æstivali, sed dorsi et capitis plumis fulvido marginatis.

Adult Male in summer (Algeria). Crown, sides of the head and neck, back and wings black; a line across the forehead passing above the eye and joining a large patch on each side of the fore part of the back, and a large alar patch covering the basal half of the outer web of the secondaries pure white; quills not so black as the back, but washed with brown; rump and upper tail-coverts orange-red; central tail-feathers dull brown, margined and tipped with orange-red; remaining rectrices orange-red; entire underparts rich orange-red, paler towards the vent, and pale buffy white on the centre of the abdomen; bill and legs black; iris brown. Total length 4.75 inches, culmen 0.52, wing 2.6, tail 2.0, tarsus 1.0.

Adult Female (Zaghuan, Algeria). Upper parts dull greyish brown; underparts dull greyish, washed with dull orange; quills dark brown, broadly margined with pale greyish brown; tail as in the male, but duller in colour; rump washed with dull orange; upper tail-coverts orange-red. In general appearance it closely resembles the female of *R. phænicurus*, but is smaller, has less red on the rump, and more on the underparts. Total length 4.5 inches, culmen 0.52, wing 2.45, tail 1.9, tarsus 0.95.

Winter plumage. In the winter plumage the male bird has the black on the upper parts somewhat obscure, the feathers having brown tips; otherwise the winter plumage agrees with that worn in the summer.

THIS, one of the most beautiful of the Redstarts, is found only in North-western Africa, where, however, it is not uncommon in suitable localities. First described by M. L. Olph-Galliard in 1852, it was discovered, Canon Tristram states, in 1847 by Mr. Fraser, though not described by

that gentleman, the specimens obtained by him being now in the British Museum. M. Olph-Galliard, who described specimens obtained by M. Moussier, writes (Naumannia, 1852, p. 68) that this gentleman "met with the present species in February in the province of Oran, where it is rare. It is more shy than the Stone-Chat, with which species it consorts. Perched on an *Asphodelium* plant it perceives danger from afar, and generally disappears before the sportsman can get within shot-range." Almost all the naturalists who have visited Algeria record this bird. Mr. O. Salvin (Ibis, 1859, p. 307) writes that it "is perhaps one of the most interesting in the regency of Tunis and Eastern Algeria, where I had the pleasure of observing it. Its favourite resorts are the ruins of the old Roman cities which lie scattered in all directions throughout this district, and the loose rocky ground which skirts the plains at the foot of the surrounding hills. When visiting such spots, the bright plumage of the male, as he glides from stone to stone, is one of the first objects that attract the attention. The note uttered by the male is peculiar; and, unlike that of any of its congeners, it is monotonous but not unpleasing. This bird seems intermediate between the Stone-Chats and Redstarts; but I am inclined to consider that it is more closely allied to the former than to the latter: the character of the plumage of the male would lead one to this supposition; and its habits, actions, and nest tend rather to confirm the idea. The eggs, which are white, with the faintest tinge of greenish blue, only indicate its connexion with the whole group, including the Wheatears; and, as in the case of the eggs of *Saxicola ænanthe*, I have no doubt that spotted varieties occur. On observing the eggs of the *Saxicola* and *Ruticillæ* mentioned in this paper, an intimate relationship can be traced between the whole. In the first instance, take the richly coloured and highly marked eggs of *S. leucura*, *S. aurita*, and *S. stapazina*, all of which are greenish blue, with decided spots of red-brown; next to them I would place those of *S. rubetra*, which are similarly marked, but not so deeply; then those of *S. rubicola*, which also are spotted, but more indistinctly; next follow the pale, delicately coloured eggs of *S. ænanthe*, in which a tendency to spotted varieties is not unfrequently noticeable; then come the eggs of *R. phœnicura*, among which spotted varieties occur, but not so commonly as in the preceding. Those of *R. moussieri*, with their just-traceable colouring, follow next in succession; and lastly those of *R. tithys*, which, though white, and differing widely from the well-marked eggs of *S. leucura*, can still be connected with the series through the medium of *S. ænanthe* and *R. moussieri*." Canon Tristram also, writing on the ornithology of Northern Africa, says (Ibis, 1859, p. 416) that he first obtained it "in 1855 near Boghar, on the southern slope of the Western Atlas. This is, I believe, its extreme northern range in the western part of Algeria; and it has not been observed, so far as I am aware, in the province of Oran, or in Morocco. But in Tunis it approaches nearer the coast. . . . It is an attractive little bird, as well in its plumage as in its habits and song, partaking of the characteristics both of the Redstart and Stone-Chat, between which it appears to be a link. In the northern Sahara it is very scarce, but increases in numbers as we advance southwards, being always to be found in the gardens and palm-groves, and generally in the thickets of the dayats. In the whole of the M'zab country it is abundant; and its lively note and repeated cry (whence its name of 'Zinzukh') may be heard about all the fruit-trees." Writing again in 1860 (Ibis, 1860, p. 365) on this species, Canon Tristram continues as follows:—"While one race of man after another has rushed like a flood over North Africa, and left the faint traces of each invasion in a few stranded ruins on the

shores, or in the tide-marks of some wreck of humanity on the mountain-sides—long before the first Phœnician galley had entered the Bay of Tunis and treated with the Numidian king, before either Roman, Vandal, or Saracen had disturbed his retreats, Moussier was here, never disturbed by a restless taste for emigration, or an appetite for the slopes of Alps or Apennines. I love to watch him as a gentle and genuine Numidian, the one local and peculiar bird. Mauritania (now the province of Algeria) he avoids. The only time I ever found him beyond the frontier of Constantine was once in the forest of Boghar; and there he was so rare that, of several local French naturalists, not one could tell me what it was. Towards the east he gradually approaches the shore, not crossing the watershed in Constantine, but at Tunis resorting commonly to the ruins of Utica near the coast, and thence extending his range as far as the oases of Djereed, Nefta, and Souf, while in all the more southern oases of the M'zab and Waregla he abounds.

“Still I hardly expected him at Weled Zeid; and not having, up to this time, met with the nest, I kept careful watch, feeling sure, from the actions of the bird, that his mate was not far distant. Perhaps it is owing to her modest and inconspicuous plumage that the female is but rarely observed, so rarely that I am sure we noted at least a dozen males for every hen bird we saw. With her brown back and russet-red breast, she is detected with difficulty in the bushes, and, unlike her consort, rarely exhibits herself on the top of a bush or on the edge of a stone, remaining generally among the roots of the thickets. Though in distribution of plumage Moussier's Warbler shows a strong affinity to the Redstarts, yet, in its habits and manner of perching, it is a true Furze-Chat, and I fully agree with Mr. Salvin's opinion (*Ibis*, i. p. 307) that it is more of a Chat than a Redstart.

“After a long search I discovered the nest, with a single egg, artfully concealed near the base of a small thirza bush. The nest is very warm, rather loosely built, with a slight skeleton of very small twigs, and a thick lining of grass, wool, cow's hair, camel's hair, and many feathers, chiefly Hoopoe's; within this a very neatly laid lining of fine hair. The nest is not so compact as those of the Whin- and Stone-Chats, but very like that of the Redstart. . . . It does not appear that this bird is anywhere, even partially, a migrant; nor could I ascertain that in any locality it is more plentiful in one season than in another.” Mr. J. H. Gurney, jun., who visited Algeria some years later, writes (*Ibis*, 1871, p. 81) that he “obtained a fine male of this species in a ploughed field at Miliana, upon an offshoot of the Little Atlas, 700 metres above the sea. It was alone, not far from a path by which ran a small stream of water; I also shot two females at the foot of the hills, where the soil was sandy. Its occurrence at Miliana was interesting, as Dr. Tristram had considered Boghar to be its extreme northern range in the western part of Algeria. There I also got a specimen, high up in the mountains; but it was not until I arrived at Guelt el Stel that I found the species plentiful. At this place a good many trees grow, and I observed that these birds perched freely on them; but I have also seen the Stone-Chat on a tree. In the M'zab country I did not see any, strange to say.

“*R. moussieri* is a shorter, stouter bird than *R. phœnicura*; hence it cannot hop or fly nearly so quickly, except when pursued. I think its flight even slower than a Stone-Chat's; and it seldom flies far without perching on a stone, clod, or small bush, where it moves the body up and down like *R. phœnicura*. *R. moussieri* jerks the tail sometimes, but never so rapidly as *R. phœnicura*. When feeding, it digs its bill into the ground very frequently, and looks round

after each dig, with the pert air of a Robin. They pair in March; and the males look very pretty as they chase the females among the bushes and rocks. As this bird occupies such a dubious place between the Chats and the Redstarts, I was anxious to see which of its actions corresponded with the former, and which with the latter. They were quite tame at Guelte el Stel, and I had abundant opportunities of watching them. At that time the black of the back was still edged with brown." Major Loche, who met with it "near Mostaganen, Sidi-bel-Abbés, and in the Algerian Sahara," gives full details respecting its habits, which, as they agree with what I have quoted above, I do not translate. As will be seen by the above particulars respecting the habits of this species, it forms a distinct link between the Redstarts and the Stone-Chats; but after a careful examination of specimens, I have decided on including it in the former group, as I think it approaches nearer to the Redstarts than to the Stone-Chats, though in its habits it closely resembles the latter.

Canon Tristram, who obtained the eggs of this species in Algeria, writes to me that "they are very hard to describe. They are exactly the size and shape of those of the common Redstart, but the colour is peculiar; I never met with any eggs coloured like them; they are white, with the faintest possible bluish tinge, and form a striking contrast to the milky whiteness of eggs of *Ruticilla tithys*, which latter are in the next compartment of my cabinet. I may call their colour a 'skim-milk' white. Though my eggs have remained fifteen years in the cabinet, they retain this characteristic blueness, and are most like the eggs of some of the Desert-Chats or *Campicola pileata* of South Africa in their ground-colour, though the latter have all a few russet spots; the blueness is fainter than that in the eggs of *Ardea russata*, more that of *Ardeola exilis* of America, which in the colour of its eggs bears the same relation to *Ardeola minuta* of Europe that *R. moussieri* does to *R. tithys*."

The present species is said to be entirely insectivorous, feeding on small coleoptera, caterpillars, and insects of various kinds which it picks up on the ground or on the bushes.

The specimens figured and described are an adult male obtained through Mr. E. Fairmaire, and a female collected by Dr. Sclater, both being in my collection.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a, b, c, ♂ ad. Algeria (*Fairmaire*). *d, ♂.* Oudena, Algeria, February 1858 (*P. L. Sclater*). *e, ♂.* Guelte-el-Stel, Algeria (*J. H. Gurney, jun.*). *f, ♂.* Algeria, November 28th, 1856 (*H. B. Tristram*). *g, ♀.* Zaghuan, Algeria, February 1858 (*P. L. Sclater*).

E Mus. H. B. Tristram.

a, ♂. Ain Oosera, Algeria, November 3rd, 1856. *b, ♀.* Laghouat, November 14th, 1856. *c, ♀.* Berryan, December 1st, 1856. *d, ♂.* Gardaia, December 5th, 1856. *e, ♂.* Biskra, January 23rd, 1857 (*H. B. T.*). *f, ♂.* Algeria.



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GÜLDENSTÄDT'S REDSTART
RUTICILLA ERYTHROGASTRA

RUTICILLA ERYTHROGASTRA.

(GÜLDENSTÄDT'S REDSTART.)

- Motacilla erythrogastra*, Güld. Nov. Comm. Petrop. xix. p. 469, pls. 16, 17 (1775).
Chestnut-bellied Warbler, Lath. Synop. ii. pt. 2, p. 424 (1783).
Sylvia erythrogastra (Güld.), Lath. Ind. Orn. ii. p. 513 (1790).
Motacilla ceraunia, Pall. Zoogr. Rosso-As. i. p. 478 (1811).
Lusciola (Ruticilla) aureora, Keys. & Blas. Wirbelth. Eur. p. 59 (1840, nec Pall.).
Ruticilla aureora, Bp. Cat. Metod. Ucc. Eur. p. 39 (1842, partim).
Phœnicura reevesii, Blyth, Journ. As. Soc. Beng. xii. pt. ii. p. 963 (1843, nec Gray).
Lusciola erythrogastra (Güld.), Schleg. Rev. Crit. p. xxxi (1844).
Ruticilla grandis, Gould, Proc. Zool. Soc. 1849, p. 112.
 “*Ruticilla tricolor*, Gould,” Bp. Consp. Gen. Av. i. p. 296 (1850).
Ruticilla erythrogastra (Güld.), Bp. ut suprâ (1850).
Ruticilla vigorsi, Moore, Proc. Zool. Soc. 1854, p. 27.
Chamærrhous erythrogastra (Güld.), Bp. Compt. Rend. xxxviii. p. 8 (1854).
Ruticilla (Adelura) erythrogastra (Güld.), Blanf. Journ. As. Soc. Beng. xli. pt. ii. p. 51 (1872).

*Figuræ notabiles.*Güldenstädt, *l. c.*; Moore, Proc. Zool. Soc. 1854, pl. lx.

♂ *ad.* fronte nigrâ, pileo et nuchâ albis vix griseo tinctis: capitis lateribus, gulâ, gutture, collo, pectore superiore et dorso nigris; uropygio, supracaudalibus et corpore toto subtùs saturatè ferrugineis: caudâ saturatiore, rectricibus centralibus fusco tinctis: alis nigris, remigibus ad basin albis plagam albam magnam formantibus: rostro et pedibus nigris: iride fuscâ.

♀ *mari* dissimilis: capite et corpore suprâ fusco-cinereis, subtùs pallidiore: supracaudalibus sordidè rufescentibus: caudâ sicut in *mare* picturatâ sed sordidiore: subcaudalibus pallidè rufis: alis saturatè griseo-fuscis, remigibus extùs pallidiore marginatis, sed plagâ albâ nullâ.

Adult Male (Tiflis, Caucasus). Crown and nape white, tinged with silvery grey; a narrow band across the forehead, sides of the head, entire throat, neck, upper breast, and back deep black; the basal portion of the quills white, this colour being more extended on the central remiges, and forming a large alar patch; rest of the wings black; rump, upper tail-coverts, lower breast, and underparts generally rich deep rufous or foxy red; tail rather darker rufous, the central rectrices with a brownish tinge; legs and beak black; iris dark brown. Total length about 7 inches, culmen 0·5, wing 4·1, tail 3·15, tarsus 1·0.

Adult Female (Tiflis). Plumage generally brownish ash, darker on the crown and upper parts, and on the abdomen fading to pale brownish ash-grey; tail rufous, the central rectrices tinged with brown; upper tail-coverts rufous, but duller and paler than in the male; under tail-coverts pale rufous; quills

greyish brown externally, with lighter margins, and no trace of a white speculum; bill and legs blackish brown.

Young (Kitchik Yilák, 14th September, *vide* Hend. & Hume, Lahore to Yark. p. 210). The tail and wings differ in no respect from the adult; but the whole of the head, neck, throat, and breast are covered with very loose flax feathers, bluish grey at the base, and yellowish brown towards the tips, a sort of mottled appearance being produced by the bases of the feathers showing through; the lower abdomen, vent, and lower tail-coverts are pure buffy white.

ALTHOUGH this bird is now no longer very rare in collections, yet, comparatively speaking, scarcely any thing definite is known respecting its habits, nidification, &c. It inhabits the higher ranges of the Caucasus, and is found eastward along the Himalayas, and has been stated to have occurred as far east as Dauria.

As regards its occurrence in the Caucasus I find nothing definite on record beyond what Güldenstädt, its discoverer, says, viz. that it lives on the banks of streams, and is not shy. It is said to inhabit the more elevated portions of the Caucasus, migrating southward in winter. Dr. Severtzoff records it (Turk. Jevot. p. 65) as breeding in Turkestan, and found in winter in some portions of the country. It was not met with in Persia by Mr. Blanford and Major St. John; but Dr. Jerdon states (B. of India, i. p. 139) it is "found in Bootan, Nepal, Kumaon, and Cashmere, chiefly in the higher ranges of the Himalayas, rarely lower than 10,000 feet. One pair was seen by Dr. Stewart near Landour, by the side of a stream; and it is said to frequent mountain-streams only, like *Chæmarrhornis leucocephala*. Dr. Henderson, who met with it on his journey from Lahore to Yarkand, says (Lah. to Yark. p. 210):—"This handsome Redstart was met with all through Ladák both in going and returning, and was specially abundant on the return journey in October. It was found as high as 17,800 feet on the snow in the Chang-la Pass; and, again, on the other side of the plateau it was observed in Yarkand from about 15,000 feet to the foot of the hills, but not in the plains. It frequents the neighbourhood of streams generally where there is low jungle, hopping from twig to twig and on the ground catching insects; but it does not appear, like its near relative *Chæmarrhornis leucocephala*, to feed immediately at the water's edge, or to venture on the rocks and stones in the midst of torrents. 'Kuchkatch' is the Kirghiz name for this species." Mr. Blanford, who met with it in Sikkim, says:—"I have seen this bird on the banks of streams and of lakes, but more frequently on rocky hill-sides, and at times on the edges of glaciers. It was only met with at great elevations, never below 14,000 feet; but in the highest parts of the Láchén and Láchúng valleys it was far from rare, and Captain Elwes shot it at Cholamú lake." Prjevalsky also met with it in Mongolia, and says (B. of Mong. in Rowl. Orn. Misc. pt. vi. p. 177), "In China proper and Amurland this bird does not occur; and we saw it only in the Kan-su Mountains, where it must be extremely scarce, as during the whole summer we only found one pair, at an absolute height of 13,000 feet. In September and October, however, we frequently met with this species, singly and in small flocks, on its migration along the river Tetung-gol and about Koko-nor. In the spring of 1872 the first birds arrived at the above localities on the 12th of April; and I believe I saw some on the 20th of March in the Suma-had Mountains, but am not quite certain whether they belonged to this species. It differs from the other Redstarts in its habits, and more resembles

the *Chamarrhornis leucocephala*." Dr. G. Radde states (Reis. im Süd. v. Ost-Sib. ii. p. 258) that he obtained a male in South-east Siberia on an island in the Onon, not far from the old Tschindantskisch fortress; and, according to Mr. Taczanowski, Dr. Dybowski saw one just beyond the forest-growth near the Changinskish post.

In general habits the present species is said to differ from the typical Redstarts; for it frequents rocky places near water at a considerable altitude in the mountains, especially localities where the shores of the mountain-brooks are wooded; but it is said not to perch so often on the bushes as the other Redstarts, but to move about amongst the rocks and stones, occasionally passing from twig to twig on a low tree or bush.

Its nest and eggs are as yet unknown.

The specimens figured are an adult male and female from the Caucasus.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a, b, ♂ ad., c, ♀ ad. Tiflis, Caucasus. *d, ♂ ad.* Aktash, April 4th, 1874 (*Captain Biddulph*).

E Mus. Lord Tweeddale.

a, ♂. Pangong lake, Ladak, September 21st. *b, ♂.* Ladak, September 16th (*Biddulph*). *c, ♀.* Kashgar, February 20th (*Biddulph*). *d, ♂.* Lama Pass, Sikkim, October 5th, 1870 (*W. T. Blanford*).

2011

Subfamily *SYLVIINÆ*.Genus *CYANECULA*.

- Motacilla* apud Linnæus, Syst. Nat. i. p. 336 (1766).
Sylvia apud Latham, Ind. Orn. ii. p. 521 (1790).
Saxicola apud Koch, Baier. Zool. i. p. 189 (1816).
Cyanecula, C. L. Brehm, Isis, 1828, p. 1280.
Calliope apud Hodgson, in Gray's Zool. Misc. p. 83 (1831).
Curruca apud Selby, Trans. Nat.-Hist. Soc. Northumb. i. p. 255 (1831).
Phœnicura apud Selby, Illustr. Brit. Orn. i. p. 195 (1833).
Pandicilla apud Blyth in Rennie's Field Nat. i. p. 291 (1833).
Ruticilla apud Macgillivray, Brit. B. ii. p. 300 (1839).
Lusciola apud Keyserling & Blasius, Wirbelth. Eur. p. 58 (1840).
Erythacus apud Degland, Orn. Eur. i. p. 543 (1849).

IN many respects the Bluethroats resemble the Rubythroats (*Calliope*); but they are also allied to the Redbreasts, Redstarts, and the true Nightingales. Although it is more especially a Palæarctic genus, yet the Bluethroats are found both in the northern portion of the Ethiopian Region and in the Indo-Malayan Region. There are only two species of Bluethroats known, both of which are found in the Western Palæarctic Region.

They are extremely sweet songsters; and in the northern countries where they breed, their song may often be heard at almost all hours of the night. They frequent swampy, bush-covered localities, and skulk about amongst bushes like a Hedge-Sparrow. They feed on insects, and, to some small extent, on seeds also. They build open nests, which are placed on the ground, and deposit dull greenish olivaceous eggs, which, though paler, resemble those of the Nightingale. The young are spotted, and somewhat resemble the young of *Erythacus rubecula*.

Cyanecula wolffi, the type of the genus, has the throat blue, with or without a central white spot; the bill slender, slightly deflected; the nostrils basal, oval; gape with very few small bristles; wings moderate, first quill short, slightly longer than the coverts, the second rather shorter than the sixth, the third and fourth longest; tail slightly rounded, rufous at the base; legs slender, the tarsus covered in front with one long plate and four inferior scutellæ; toes moderate, the middle toe with claw considerably shorter than the tarsus.

Professor Newton has followed many of the earlier authors in placing the Bluethroats in the genus *Ruticilla*; but it appears to me that they differ sufficiently in habits and mode of reproduction to be kept apart from the Redstarts.



CYANECULA WOLFI,
Autumn plumage and unspotted variety



WHITE SPOTTED BLUETHROAT.
CYANECULA WOLFFI

CYANECULA WOLFI.

(WHITE-SPOTTED BLUETHROAT.)

- The Blue-throat Redstart*, Edw. Nat. Hist. i. p. 28, pl. 28 (1743).
Sylvia cyanecula, Wolf, Taschenb. deutsch. Vogelk. i. p. 240 (1810, partim).
Saxicola suecica (L.), Koch, Baier. Zool. i. p. 189 (1816, partim).
Sylvia wolffi, C. L. Brehm, Beitr. zur Vogelk. ii. p. 173 (1822).
Sylvia wolffi, C. L. Brehm, Lehrbuch der Naturgesch. i. p. 344, tab. in titul. (1823).
Cyanecula wolffi, C. L. Brehm, Vög. Deutschl. p. 352 (1831).
Cyanecula obscura, C. L. Brehm, tom. cit. p. 353 (1831).
Cyanecula leucocyana, C. L. Brehm, tom. cit. p. 353 (1831).
Lusciola suecica (L.), Keyserl. & Blas. Wirbelth. Eur. p. 58 (1840, partim).
Cyanecula obscura, Br., L. Brehm, Naumannia, 1855, p. 280.
Cyanecula longirostris, Br., L. Brehm, ut suprâ.
Cyanecula major, Br., L. Brehm, ut suprâ.
Cyanecula minor, Br., L. Brehm, ut suprâ.
Cyanecula suecica auctt. nec Linn.

Blaukehlchen, German; *Rubiette gorge-bleue*, *Fauvette gorge-bleue*, French; *Het Blaauwborstje*, Dutch; *Pisco de peito azul*, Portuguese; *Garganti azul*, Spanish; *Petto Azzurro*, Italian.

Figuræ notabiles.

D'Aubenton, Pl. Enl. 361. fig. 2, 610. figs. 1, 2, 3; Werner, Atlas, *Insectivores*, pl. 49; Frisch, Vög. Deutschl. taf. 19, 20; Naumann, Vög. Deutschl. taf. 364, 365; Fritsch, Vög. Eur. taf. 23. figs. 7, 8; Gould, B. of Eur. pl. 97; Schlegel, Vog. Nederl. pl. 86; Roux, Orn. Prov. pl. 207.

♂ *ad.* *C. suecicæ* persimilis, sed maculâ in jugulo centrali albidâ, nec ferrugineâ: vel gulâ et gutture cæruleis immaculatis.

♀ *ad.* corpore suprâ ut in mare: gulâ et gutture albidis: gutture laterali nigricante striato, et pectore superiore eodem colore maculato et grisescente schistaceo lavato: pectore imo et abdomine albidis, hypochondriis griseo adumbratis.

Adult Male (Barcelona, May). Resembles the adult male of *Cyanecula suecica*, except that the spot in the centre of the blue throat is pure white instead of bay.

Adult Female (Spain). Upper parts as in the adult male; throat and fore neck white, on the sides of the throat marked with black so closely as to appear to have a continuous broad line of that colour; across the upper part of the breast there is also a band of black markings, but less clearly defined than those on the sides of the throat; rest of the underparts whitish, washed with grey, especially on the flanks;

and this grey tinge is also present on the pectoral bands and the sides of the throat; under tail- and wing-coverts washed with pale orange.

Young Male in first autumn (Solling, Hartz). Upper parts as in the adult bird, but rather duller, and more uniform in colour, and here and there a few of the nestling feathers remain; secondaries and wing-coverts margined with rufous; from the base of the bill over the eye pale rufous; chin and throat white, washed with yellowish, on each side bordered with black, and to some extent dull blue; below this white patch a broad pectoral band of blackish, and here and there a blue feather intermixed with some of the feathers of the nestling plumage; and below this the breast is washed with rufous; rest of the underparts dull white.

Adult Male in winter (Malaga, February). Resembles the male in spring plumage; but instead of the brilliant blue throat, with a central white spot, the chin and upper parts of the throat are white, only on the sides (which are otherwise blackish) slightly marked with blue; lower part of the throat below where the white spot is present in the summer plumage blue, obscured by the feathers having whitish tips; below this the black and bay bands are present, but are somewhat obscured, owing to the feathers having white tips.

Obs. A male killed in December, near Malaga, now in the collection of Mr. Howard Saunders, resembles the specimen last described, but has the white on the chin and throat rather blurred with black and slightly washed with pale yellowish orange; and I should think that it is a younger bird than that, more especially as I observe that all the immature specimens appear to have the throat slightly clouded with yellowish; and I find it most difficult to distinguish them from the young of *C. suecica* in that plumage. A male in my own collection, shot at Halle, in Saxony, in the autumn, resembles the adult female above described, but has the lower part of the throat and upper part of the breast washed with dull blue; and there are one or two dull orange-coloured feathers on the breast, some of which are narrowly tipped with blue.

The old female probably assumes a plumage closely resembling that of the young male, as is the case with the female of *C. suecica*. A specimen obtained at Granada in September 1870, and marked "female," has the throat and breast as in the male in winter plumage above described, but has the white on the throat washed with yellowish. As this bird bears considerable resemblance to the old female of *C. suecica* obtained by Mr. E. R. Alston, I have deemed it best to figure it for comparison.

THE White-spotted Bluethroat is the western representative of *Cyanecula suecica*, and is found in Central and Western Europe, North-western Africa, and is said on one or two occasions to have been met with in Asia.

It has, as stated in the article on *C. suecica*, been but once recorded from England, but is common in Germany and Holland, as well as in most parts of continental Europe. In Scandinavia it does not appear to have occurred, being there replaced by *Cyanecula suecica*. According to Naumann (Vög. Deutschl. xiii. p. 376) "it is certainly less numerous in Germany than the bird without any white spot, but much more so than the red-spotted or Swedish bird, but is met with in similar localities, though not always in the same countries, as that species. It appears to inhabit the western part of Germany, and is there commoner than towards the east or north-east, and has not been met with on Heligoland, where the Swedish bird is found. It rarely breeds with us, but is commoner on the Rhine and the Danube." In the same work he

states, writing respecting the unspotted bird, which I look on as identical with the present species, that in Central and Northern Germany it is found everywhere during migration, and in many localities it breeds.

Borggreve writes that it occurs throughout Northern Germany, and breeds in almost every willow-garth from the Rhine to the Vistula; and Dr. Rey informs me that it appears in the neighbourhood of Halle early in March, and remains there to breed, its nest being not unfrequently found on the banks of the Saale. In Holland and Belgium it is exceedingly common, and breeds numerously in the osier-beds and swampy localities. It occurs in France, but does not appear to be so common there as in Germany; and Professor Barboza du Bocage records it as occurring in Portugal, where, however, it is rare. In Spain, according to Mr. H. Saunders (Ibis, 1871, p. 210), it "occurs in the spring and autumn migrations. I have specimens both with the white patch and with the red patch on the throat; but in the series in the Malaga Museum is the finest specimen I ever saw killed in *summer*, without any spot at all, the throat and breast being of the richest ultramarine, darkening at the lower edge, followed by deep chestnut." To the above I may add that Mr. Saunders has brought to me his entire series for examination, and I find that they are all referable to the present species. Some of the specimens are in immature plumage, having the white spot clouded with pale rufescent ochre, and these are doubtless the birds he has mistaken for the red-spotted species. Mr. Saunders further writes to me respecting the unspotted bird as follows:—"The entirely blue-throated birds are rare in Spain, and besides the one I send you I have only seen one other, which is in the Malaga Museum. But even in all you can see the white spot underneath by merely raising the feathers." Dr. Brehm obtained it in September near Murcia, but did not observe it elsewhere.

Passing eastward, again, I find it, according to Bailly, occurring in Savoy during the seasons of migration; he also states that a few remain there to breed, and that two or three pairs may annually be found nesting on the banks of the Laisse, near the marshes of Bissy and la Motte-Servolex; and he likewise observed it during the summer in bush-covered swampy localities in the mountains near Chambéry, especially at Apremont and Entremont, near the Coche Hill. Count Salvadori also records both this and *C. suecica* from Italy; and Professor Doderlein met with it in Sicily. In Sardinia it appears to be rare. Mr. C. A. Wright met with the present species on Malta, and writes (Ibis, 1870, p. 491) that "on the 28th of March, 1869, a male of the white-spotted form of this bird (*C. leucocyanea*?) was shot in a field of *Hedysarum coronarium*. It has before been occasionally killed in Malta, but it is so extremely rare that this was the first specimen that ever came into my hands in the flesh. The blue of the breast was very brilliant, and the pectoral spot of a pure silvery white. Several others were seen and shot about the same time." In Greece, according to Von der Mühle, the true *C. suecica* alone occurs, as stated in my article on that species; but the present bird occurs in Palestine, where, according to Canon Tristram (Ibis, 1867, p. 86), "both species are winter visitants, resorting to the marshy lowlands and the banks of small streams, frequently in consort with Pipits. We found the two species sometimes together, though the former was the more common. They remained up to the middle of April, after which we saw them no more. They are very quiet; and we never observed them to perch, or leave the marshy grounds, being at this time of the year decidedly aquatic in their habits."

In North-eastern Africa the present species occurs as well as *C. suecica*; and judging from the series I have before me, it appears to be almost as common. In North-western Africa, however, the white-spotted bird alone appears to occur. Loche records it from Algeria, where it winters; and Mr. J. H. Gurney, jun., says (*Ibis*, 1871, p. 82) that he found it "pretty common at Laghouat, seems only to show itself on being frightened, when it seeks the cover of rushes. It prefers young wheat and reedy places, and, as a rule, does not perch on trees. There is but little of the Redstart in its habits. I frequently saw the two species at the same time (though never consorting); and a greater contrast it would be difficult to imagine." Mr. C. F. Tyrwhitt Drake also met with it in Tangiers and Eastern Morocco, where it is, he says (*Ibis*, 1867, p. 426), "very shy, and consequently little seen, but not rare. This is the form with the *white* breast-spot."

To the eastward the present species is said to have occurred as far in Asia as India, where, according to Mr. A. O. Hume (*Lahore to Yarkand*, p. 214), it has been met with at least on four occasions; and he possesses two Indian-killed specimens. De Filippi also records its occurrence in the valley of the Lar, Persia.

I may remark that I think it possible that immature specimens of *C. suecica* may have been mistaken for the present species, as I have one such from India which has the throat white, slightly clouded with yellowish.

In its habits *Cyanecula wolffi* does not appreciably differ from its close ally *C. suecica*; and like that species it frequents marshy localities, keeping generally amongst the low marshes, through which it creeps, mouse-like, and is not easily observed. Bailly writes that both the male and female cooperate in the construction of the nest, and commence operations about the 8th or 12th of May; the foundation and outside of the nest is constructed of leaves, dry grass, moss, and rootlets, inside which the inner cup is composed of fine roots and lined with still finer materials, as well as horsehair and feathers. It is placed on the ground, like that of the Red-breast, at the foot of a bush, or in a tussock, or amongst small osiers. In its note and song the present species closely resembles the Red-spotted Bluethroat, and, like that bird, feeds on insects and their larvæ, and to some extent also on seeds of various kinds.

Its eggs, of which I have a series from Valkenswaard, in Holland, are undistinguishable from those of *C. suecica*, and, like those, vary considerably in shade of coloration; but most of the eggs I have seen, which have been obtained in Holland, were, if any thing, to some slight extent darker, and are in colour more like those of the Nightingale than eggs of *Cyanecula suecica* obtained in Scandinavia.

I have carefully examined what specimens I have been able to procure of *Cyanecula wolffi*, especially the form having the blue throat without any central spot, and am unable to find any specific difference between it and the ordinary white-spotted bird. Even those which have the throat at the first glance pure unspotted blue, have, on closer examination, the base of at least one or two feathers white. I have before me examples with the central white spot very clearly developed and large, others with it smaller; and in fact there is a perfect gradation between those with a large spot and those having the blue uniform and unspotted. Professor Newton (*Yarr. Brit. B.* p. 324) looks upon the unspotted bird as being distinct from the present species, and states that it has the tarsus smaller, measuring 0.95 to 1 inch; whereas in the white-spotted

bird it measures 1.04 to 1.08, and in *C. suecica* from 1 inch to 1.18. Against this I may remark that I have measured three examples of the unspotted bird and compared them with three of each of the white-spotted species and *C. suecica*, these latter being picked out at random, merely as being extremely fine and adult males; and the measurements are as follows:—

| | Culmen. inch. | Wing. inches. | Tail. inches. | Tarsns. inch. |
|--|------------------|------------------|------------------|------------------|
| <i>Cyanecula wolff</i> (unspotted) . . | 0.68-0.7 -0.7 | 2.86-2.85-2.98 | 2.43-2.28-2.4 | 1.09-1.12-1.0 |
| „ (white-spotted) . | 0.68-0.71-0.69 | 2.84-2.98-2.78 | 2.3 -2.41-2.33 | 1.05-0.95-1.03 |
| <i>Cyanecula suecica</i> (red-spotted) . | 0.7 -0.7 -0.67 | 3.02-2.9 -2.86 | 2.47-2.45-2.46 | 1.2 -1.1 -1.1 |

With the above facts before me I cannot look on the unspotted bird as being a distinct species, but consider that it is merely in the state of plumage in which the white spot is absent, and is probably an old male of the White-spotted Bluethroat. This being the case, I have no alternative but to use the specific appellation of *wolff* instead of *leucocyana*, it having the precedence by nine years.

In the article on *C. suecica* I give full particulars as to the specimens of both species figured to which I here refer.

The specimens described are in my collection; particulars as to locality are given above.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a, ♂. Barcelona, Spain, May 1865 (*H. E. D.*). *b*, ♂. Malaga, Spain, November 27th, 1871 (*Howard Saunders*). *c*, ♀. Malaga, Spain, October 5th, 1871 (*Howard Saunders*). *d*, ♀. Spain (*Saunders*). *e*, ♀. Granada, Spain, September 1870. *f*, *g*, ♀. Sevilla, Spain (*Irby*). *h*. Spain (*Irby*). *i*. Westphalia (*Schlüter*). *k*, ♂. Moravia (*Schlüter*). *l*, ♂. Halle (*Schlüter*). *m*, ♂. Attenburg, Germany (*Möschler*). *n*, ♀. Switzerland (*Möschler*). *o*, ♂. Turin, Italy (*Turati*). *p*, juv. Solling, Hartz, autumn (*Schwerdtfeger*).

E Mus. G. E. Shelley.

a, ♂, *b*, ♂. Egypt, March 7th, 1868 (*Shelley*). *c*, ♀. Egypt, February 20th, 1870 (*Shelley*). *d*, ♀. Egypt, March 27th, 1871 (*Shelley*). *e*, ♂. Egypt, March 14th, 1871 (*Shelley*).

E Mus. F. Bond.

a, ♂, *b*, ♂. Germany (*T. Cooke*).

E Mus. Howard Saunders.

a, ♂ *ad.* Valencia, March 6th. *b*, ♂ *ad.* Valencia, April 9th. *c*, ♂ *juv.* Valencia, December 10th. *d*, *e*, ♂ *im.* Malaga, October 15th. *f*, ♂. Malaga, December 20th. *g*. Malaga, February 10th. *h*. Malaga, January 1st. *i*, ♂, *j*, *juv.* Seville, September 30th. *k*, *l*, ♂ *ad.* Genoa (*H. S.*).



RED-SPOTTED BLUETHROAT

Monticola sibilatrix

31



1 & 3. CYANECULA WOLFFI.

2 CYANECULA SUECICA

CYANECULA SUECICA.

(RED-SPOTTED BLUETHROAT.)

- Motacilla suecica*, Linn. Syst. Nat. i. p. 336 (1766).
Sylvia suecica (L.), Lath. Ind. Orn. ii. p. 521 (1790).
Sylvia cyanecula, Wolf, Taschenb. Deutsch. Vogelk. i. p. 240 (1810, partim).
Motacilla cærulecula, Pall. Zoogr. Rosso-As. i. p. 480 (1811–31).
Saxicola suecica (L.), Koch, Baier. Zool. i. p. 189 (1816, partim).
Ficedula suecica (L.), Boie, Isis, 1822, p. 553.
Cyanecula suecica (L.), C. L. Brehm, Vög. Deutschl. p. 350 (1831).
Cyanecula orientalis, C. L. Brehm, tom. cit. p. 351 (1831).
Calliope suecioides, Hodgson in Gray's Zool. Misc. p. 83 (1831).
Cyanecula suecioides, Hodgson, ut suprâ (1831).
Curruca suecica (L.), Selby, Trans. Nat. Hist. Soc. Northumb. i. p. 255 (1831).
Phœnicura suecica (L.), Selby, Illustr. Brit. Orn. i. p. 195 (1833).
Pandicilla, Blyth (*Motacilla suecica*, Linn.), Field Naturalist, i. p. 291 (1833).
Ruticilla cyanecula (Wolf), Macgillivr. Brit. B. ii. p. 300 (1839).
Lusciola suecica (L.), Keyserl. & Blas. Wirbelth. Eur. p. 58 (1840, partim).
Lusciola cyanecula orientalis, Schlegel, Rev. Crit. p. 32 (1844).
Erythacus suecica (L.), Degl. Orn. Eur. i. p. 543 (1849).
Sylvia cærulegula, Pall., Blyth, Cat. Mus. As. Soc. p. 167 (1849, *lap. cal.*).
Cyanecula cærulecula (Pall.), Cab. Mus. Hein. i. p. 1 (1850).
Cyanecula dichrosteria (Pall.), loc. cit. (1850).
Cyanecula cyane, Bp. Cat. Parzud. p. 5 (1856).
Cyaneula suecica (L.), Jerdon, B. of India, ii. p. 152 (1863, *laps. cal.*).
Sylvia cyanea, Eversm. Add. Pall. Zoogr. fide Degl. & Gerbe, Orn. Eur. i. p. 437 (1867).

Blue-throated Warbler, *Bluethroat*, English; *Blaukehlchen*, German; *Blaakjalken*, Danish; *Blaastrube-sanger*, Norwegian; *Blåhake sångaren*, Swedish; *Gjelanælgo*, Lap.; *Sinirintakerttu*, Finnish.

Figuræ notabiles.

Kjærbølling, Danm. Fugl. taf. 22; Gould, B. of Great Britain, ii. pl. 49; Fritsch, Vög. Eur. taf. 23. figs. 6, 9; Sundevall, Sv. Fogl. pl. xii. figs. 6, 7.

♂ *ad.* capite et corpore suprâ saturatè fuscescentibus vix griseo lavatis: cervice indistinctè nigricante striatâ: uropygio vix olivaceo adumbrato: remigibus nigricanti-brunneis, in pogonio externo vix pallidè brunneo marginatis: rectricibus duabus centralibus brunneis, reliquis dimidio basali ferrugineis et dimidio apicali nigranti-brunneis: a naribus supra oculum striâ albidâ: gulâ et gutture pulchrè nitidè cæruleis, maculâ centrali ferrugineâ et fasciâ nigrâ terminatâ: pectore superiore ferrugineo, abdomine albido: crisso et subalaribus rufescente lavatis: rostro et pedibus brunneis: iride saturatè brunneâ.

♀ *ad.* corpore suprâ, alis et caudâ ut in mare sed paullo pallidioribus: gulâ et gutture grisescenti-albidis, lateraliter nigro notatis et vix cæruleo lavatis: jugulo imo albedo, rufescente adumbrato: pectore superiore fasciâ nigrâ: abdomine albedo, pectore imo vix rufescente lavato.

Adult Male (Christiania, 19th April). Upper parts dark hair-brown, with a faint greyish tinge; feathers on the crown with rather darker centres, and the sides of the crown rather darker than the rest of the upper parts; rump washed with olive-brown; quills with rather lighter margins to the outer webs; two central rectrices clove-brown, the remainder with the basal half bright bay, and the terminal portion blackish brown; over the eye a whitish streak; chin, throat, and fore part of the neck down to the breast rich ultramarine-blue, with a large central spot of bright bay; the lower portion of the blue area darkens into black, forming a distinct band of that colour, and below this, again, there is a tolerably broad bay band; rest of the underparts dull white; under wing- and tail-coverts washed with reddish; bill and legs brown, the former darker; iris dark brown. Total length 6 inches, culmen 0·65, wing 3·05, tail 2·35, tarsus 1·1.

Adult Female (Egypt, 31st March). Upper parts as in the bird last described, but somewhat paler in tinge; throat with but little trace of blue, being greyish white marked with blue on the sides, which are on the lower part marked with black; on the lower part of the throat is a pale whitish bay spot slightly marked with blue; below this a blackish band crosses the breast, below which the white is slightly marked with bay; rest of the underparts dull white.

Obs. A female, killed by Mr. Alston in Norway, is precisely similar to the above; but I have before me several (and amongst them one shot from the nest by Mr. Alston) which have no trace of blue or bay on the throat. It appears, therefore, that the female breeds in this latter plumage as well as in the dress in which it so closely resembles the young male. Mr. R. Collett obtained one breeding in this plumage, and writes as follows:—"A very peculiar coloration marked the plumage of a female shot on the Dovre, July 13th, 1871. In this specimen the chin was blue, blended with whitish; the breast lightish brown, on the sides bordered with a black band, spotted with white; below the breast there was a blue stripe margined with red. Though not a sterile female (the ovarium contained eggs the size of a pea), this individual was very like a young male."

Nestling (Nertshinsk, Ural, 23rd July). Upper parts blackish brown, striped with reddish yellow, each feather having a central stripe of that colour; upper tail-coverts reddish; tail blackish brown, rufous at the base, excepting the central rectrices, which are entirely blackish brown; quills blackish brown, primaries tipped with buff, secondaries and wing-coverts margined and tipped with rufous; throat and breast striped like the back; lower part of the abdomen dull buffy or yellowish white.

Obs. Having before me a considerable series of specimens of the two species of Bluethroats from various localities, the following remarks on them may prove acceptable to my readers:—

Great Britain. I have not had an opportunity of examining a British-killed specimen; but it appears that only *C. suecica* has occurred here.

Norway and Sweden. The species frequenting these countries is the true *C. suecica* (L.), having the centre of the breast bright bay; specimens from Norway and Russia are the most richly coloured of any in my series. An adult female, shot in Finmark by Mr. Collett, has the entire throat white, bordered on the sides with black, and washed with pale orange; were it not for this latter tinge, it would be undistinguishable from a female obtained by Major Irby near Seville, in Spain. Another female, obtained by Mr. E. R. Alston on the Valdresfjeld, approaches the adult male in appearance, except that the chin and upper part of the throat

is dull white, faintly tinged with blue, and the patch below is very large and pale orange-bay in colour; another female, shot by Mr. Alston from the nest on the Fillefeld, has no trace of blue or bay on the throat, but the chin and upper part of the throat are white, and there is a broad blackish brown band across the breast. Mr. F. Bond has lent me a specimen from Sweden, obtained by Mr. Wheelwright, which is in a peculiar plumage, being precisely similar to the ordinary adult male of *C. suecica*, except that the bay breast-spot has a narrow white border round it; and I can only account for this peculiarity in its plumage by supposing that it is a hybrid between the two species, as it is well known that many distinct though closely allied forms will occasionally interbreed.

Lapland. I have one specimen, an adult male, forwarded to me by Mr. Heikel, from Rovaniemi-Lapland, which agrees with Swedish examples, but has the bay breast-spot very large and bright in colour.

Finland. A single adult male, shot by myself, early in May, near Uleåborg, agrees precisely with the specimen from Rovaniemi.

Russia. Two males in my collection, one from Mezen and the other from Archangel, closely resemble the specimen from Rovaniemi; and a female, shot on the 2nd July at Mezen, is precisely like the female shot in Finmark by Mr. Collett. Two from the South-eastern Ural, an adult male and a very young bird, agree also with Scandinavian specimens.

Germany. In a considerable series from various parts of Germany I find all referable only to the white-spotted species—that is, taking it for granted, as I do, that *C. wolffi* is not distinct from that bird. One, shot in autumn near Halle, is in rather peculiar plumage, having the throat white, bordered on each side with black, and washed with blue; the black band on the breast is very indistinct; and below it are a few dull orange-red feathers. I am indebted to Mr. Bond for the loan of two specimens of the form which has been described as *C. wolffi*, and find that, though apparently the throat is uniform blue, on moving the feathers white appears, as some are white at the base.

Switzerland. A single specimen in my collection, a female, is referable to the white-spotted form, and closely resembles the female from Spain, which I have figured, and which has no blue on the breast.

France. One specimen, an adult male from Rouen, in Mr. E. R. Alston's collection, has a very small white spot in the centre of the blue on the throat.

Spain. In a large series of specimens in the collection of Mr. Howard Saunders and in my own possession I find a considerable variation in plumage. Many of them are in immature plumage, and are then scarcely distinguishable from the young of *C. suecica*; and one adult male has the throat all blue unspotted.

Italy. A single specimen sent to me by Count Ercole Turati is an adult male of the white-spotted species, having the spot very clearly defined.

Egypt. In the collection of Captain G. E. Shelley there is a very fine series of specimens, all obtained in the spring of the year. Amongst these are adult males of both the Red-spotted and the White-spotted Bluethroats, thus showing that both pass there during migration. One specimen, a male, has the white spot very large; and in the centre of this white patch some of the feathers are tipped with reddish orange; and I can only suppose that it may be a cross between the two species, as it is well known that perfectly distinct though closely allied species will occasionally interbreed where they meet.

Djeddah. A single specimen collected in this locality on the shores of the Red Sea, and sent to me by the late Mr. S. Stafford Allen, is a very fine male of *C. suecica*, having the bay breast-spot very clearly defined and rich in colour.

India. Specimens I have examined from there are all referable to *C. suecica*. Lord Walden informs me that he has lately obtained an adult male from the Andaman Islands, which, though shot in the winter, has the blue and bay on the throat very fully developed. One specimen in my collection, in immature plumage, has the throat very faintly marked with yellowish, and can easily be mistaken for an immature *C. wolffi*. It is possible, I think, that birds in this stage of plumage may have been mistaken for the White-spotted Bluethroat.

Central Asia. An adult male, obtained from the late M. Jules Verreaux, labelled as having been collected in Central Asia, and one from

Lake Baikal, obtained by Dr. Dybowski in June 1868, agree closely with specimens of *C. suecica* from Northern Russia.

China. A large series in the collection of Mr. R. Swinhoe, which I lately had an opportunity of examining, are all referable to *Cyanecula suecica*.

Explanation of Plates. On the first Plate I have figured two adult males, in full plumage, of *C. suecica*, the one to the left being from Christiania, and the one in the centre from Egypt, the former in my collection, and the latter in that of Captain Shelley; to the extreme right is a nestling of *C. suecica*, from the Ural. On the second Plate are three specimens of *C. wolffi*, that on the left being an adult male in breeding-plumage, and that on the right a male in winter dress, the former from Turin, and the latter from Malaga; and in the centre is a very old female, in autumn plumage, from Granada,—all being in my collection. On the third Plate the bird to the right is an adult female of *C. wolffi*, from Seville, and to the left a young bird of the same species, in the first autumn dress, from the Hartz, both being in my collection. The specimen in the centre is a very old female of *C. suecica*, from Egypt, which closely agrees with the female from Norway in the collection of Mr. Alston, referred to by Professor Newton (Yarr. Brit. B. p. 328). On the fourth Plate is a specimen of *C. wolffi*, lacking the white spot entirely, and is from Germany, being now in the collection of Mr. F. Bond. The other specimen on this Plate is a male of *C. wolffi*, in rather peculiar autumn plumage; it was obtained by Mr. Schlüter, near Halle, in Saxony, and is now in my collection.

THE Red-spotted Bluethroat inhabits Eastern and North-eastern Europe, its range extending to the eastward through Central Asia to Siberia and China. It breeds in northern latitudes, and passes the winter in far southern climes, being met with in North-eastern Africa as far south as Abyssinia. In Western Europe it is replaced by the White-spotted Bluethroat.

In Great Britain it has occurred now and then as a rare straggler; and, according to Professor Newton, it is the only species which has been obtained in this country, unless one obtained by Captain Hadfield (Zool. s. s. p. 172) is referable to *C. wolffi*, in the stage of plumage when it has the blue on the breast without any central spot.

The following is taken from Professor Newton's edition of Yarrell's 'British Birds' respecting the instances on record of its occurrence in Great Britain:—"Two instances only of the occurrence in England of this pretty warbler had been recorded when, in 1838, the species was included in the original edition of this work. The first bird, a fine cock, was shot on the Town Moor of Newcastle-on-Tyne, May 20th, 1826, by Mr. Thomas Embleton, who gave it to the Museum of that town, where it still is. This fact was first noticed in 1827 by Mr. Fox in his 'Synopsis of the Newcastle Museum' (pp. 298-308), and afterwards in the 'Zoological Journal' (iii. p. 497). The second specimen was recorded in 1837, by Mr. J. C. Dale, in the 'Naturalist' (ii. p. 275), and is said to have been killed in Dorsetshire. Soon after the time last mentioned, I was informed by Mr. Plumptre Methuen that a specimen killed near Birmingham was in his possession; and subsequently Mr. J. H. Gurney sent me word that a male example had been found dead on the beach of Yarmouth, September 21, 1841. Mr. Morris mentions, on the authority of Mr. E. Cole, one shot at Margate, in September 1842, and in September 1844 two specimens, one old, the other a young bird of the year, and both then unskinned, were sent for my inspection by Mr. Gardner. These were said to have been shot in the Isle of Sheppey. The Strickland

collection in the Museum of the University of Cambridge contains an example labelled 'Britain, 1846;' but no further particulars of its locality are known. About September 15th, 1852, one was shot near Whimble, in South Devon, as recorded by Lord Lilford (Zool. p. 3709). A hen killed at Worthing, May 2nd, 1853, is mentioned by Mr. J. W. Stephenson (Zool. p. 3907); and a cock killed early in May 1856, near Lowestoft (Zool. p. 5149), is also in Mr. Gurney's collection. Mr. Cecil Smith notices one said to have been killed in Somerset in 1856, and now in the Exeter Museum; and Mr. H. Pratt records (Zool. p. 8281) a cock caught at Brighton, October 1st, 1862, which is in Mr. Borrer's collection. Captain Hadfield in the 'Zoologist' for 1865 and the two following years, gave a series of observations made at different times on a Blue-throated Warbler which, he says, frequented a locality in the Isle of Wight from at least February 1865 to September 1867, being, for part of the time, joined by a second. Finally, Mr. Gray has informed the editor that a cock was caught on board a fishing-boat off Aberdeen, May 16th, 1872." Mr. Cecil Smith also writes to me as follows:—"I included the Blue-throated Warbler in my 'Birds of Somerset' on the authority of a specimen in the Exeter Museum, which is stated on the label to have been killed in Somersetshire; and the curator of the Museum told me he believed the statement to be correct, but knew nothing of his own knowledge about the bird. This is a red-spot bird, as, I believe, all or nearly all the British specimens are.

"Professor Ansted includes this bird in his list of Channel-Island birds on the authority of a pair at the Guernsey Museum, which were supposed to have been killed in Jersey. There was no label upon them at all; and after some cross-examination I elicited that these two birds were amongst the stock of a Jersey bird-stuffer, who was in the habit of getting skins from the Continent, and these skins were sent over to the Museum when he left Jersey, without any account of where they had been obtained; so I think they may fairly be put down as at least very doubtful Channel-Island specimens. I know that Mr. Gallienne, who at the time I inquired about them took great interest in the affairs of the Museum, did not believe in them. I believe there is no other record of the appearance of the Blue-throated Warbler in the Channel Islands."

In Scandinavia it is common; and Mr. Robert Collett, writing on the ornithology of Norway, states that it is "common in birch undergrowth in Finmark and on Tromsö; in West Finmark it was most abundant along the shores of the Porsangerfjord and in Alten. From the middle of July full-grown birds of the year were to be seen almost everywhere.

"On the southern fells this species would be seen steadily increasing from year to year. Both on the Dovre and Fillefjeld, and their ramifications, it is very abundant in wooded and willowed marshes. At the latter end of July 1872, this species, with their full-grown young, struck me as being the most numerous of all small birds in the wide marshy tract round Fokstuen, on the Dovrefjeld, a locality in which nearly the whole of our alpine fauna is found represented. At the same time individuals of this species were occasionally seen in the subalpine districts of the Gudbrandsdal; it is by no means, however, probable that the bird ever breeds here; it merely repairs from the adjacent fells at the close of the breeding-season. In the lowlands they are rarely observed, and only on their migratory passage, which may, perhaps, be partly accounted for by their shy and cautious habits. But in the vicinity of Christiania, where they have been more sought after, several examples have been procured of late years; two males, for instance, were killed on the 18th May, 1871.

"In the breeding-season the males are, as a rule, any thing but shy; they perch upon the tallest willows and sing their ever changing song, variations being constantly introduced. The azure throat, invariably with a centre spot of bay (only this form is known in Norway), renders it a highly conspicuous bird, easily recognized at a distance. Of both sexes the alarm-note is very similar to that of *Saxicola*. The 10th June, 1872, I found on the Dovre several nests, some of which contained incubated eggs; all of the nests were underneath willow bushes, and were constructed exclusively of the finest grass."

Professor Sundevall (Svensk. Fogl. p. 60) records it as common in summer in Northern Sweden, and occasionally (as, for instance, in Bohuslän in June 1849, and on Öland in June 1847) in Southern Sweden. During the autumn migration it has been observed in various parts of the country. Wheelwright found it rare near Quickjock, and did not notice any until early in June. In Finland it is, Von Wright writes (Finl. Fogl. p. 125), observed only during migration. Mr. J. von Wright and also Mr. Magnus von Wright observed it in Rautalampi and Pielis parishes. I shot a specimen near Uleåborg in May; and several adult birds were sent to me from Rovaniemi by Mr. Heikel, who informed me that it was common near the town of Rovaniemi and in Rovaniemi-Lapland. Mr. Meves found it common near Onega, in Northern Russia; and I have several specimens from Mezen and other parts of the Government of Archangel. Mr. L. Sabanäeff writes to me that it is common throughout Russia, and that he met with it everywhere in the Ural. That it breeds in the South-eastern Ural is certain, as Mr. Meves sent me a nestling from there. Mr. Jacovleff writes that it occurs at Sarepta during migration, but he never observed it near Astrachan. Throughout Germany the present species is found during the two seasons of migration, but does not appear ever to remain there to breed. Naumann (Vög. Deutschl. xiii. p. 396) says that it is during migration commoner on Heligoland than in any part of Germany, where it only occurs sparingly, and but very rarely, on the shores of the rivers, as, for instance, in Thuringia, near Dresden, Vienna, and elsewhere, but is not seen every year. Dr. A. Fritsch writes (J. f. O. 1871, p. 198) that it occurs in Bohemia during the two seasons of migration, and is seen in the spring in the month of April. In the autumn it is found frequenting the potatoe-fields. Mr. Fischer says that it has never been known to breed in Denmark, and some seasons none are even seen during migration. Lieut. Fencker shot a male in 1867, in the spring. Mr. C. F. Dubois states (J. f. O. 1860, p. 228) that the present species breeds in the neighbourhood of Liège and Louvain; but I must confess that I should like to see specimens obtained there during the breeding-season, in order to convince myself that it really is *C. suecica*. The present species does not appear to occur in France or on the Iberian peninsula; but Bailly states that a few occur during migration in Savoy, and Salvadori writes that both this and the white-spotted species have been observed in Italy on passage.

In Greece the present or red-spotted species occurs, and Count von der Mühle (Orn. Griechenl. p. 74) speaks of it as common in the autumn during migration. All found there, he states, are the true *C. suecica*, having a red and not a white spot on the throat. Lord Lilford mentions (Ibis, 1860, p. 228) his having seen a Bluethroat in the Val di Roppa, in Corfu, which probably was this species.

It occurs in Southern Russia during migration; and Professor von Nordmann states that it is common amongst the vineyards of the Crimea, especially about Simpheropol, Kara-sou-Bazar,

and the valley of the Alma, but in other districts he did not notice it. He expressly mentions that all specimens obtained in the Crimea are referable to the present species. It occurs during migration in Turkey; and Canon Tristram, in his notes on the ornithology of Palestine (P. Z. S. 1864, p. 440), states that it was obtained by Messrs. Shepherd and Upcher near Jaffa in winter. Mr. C. W. Wyatt records it (Ibis, 1870, p. 6) from the Sinaitic peninsula, and says that it occurs at Wādy Feirān, but is not common. North-east Africa appears to be its head quarters during winter; and Captain Shelley (B. of Eg. p. 85) writes that it "is an extremely abundant species in some parts of the Delta, and is very generally distributed throughout Egypt and Nubia, especially in the damper localities, or where the vegetation grows to the height of several feet. Although it frequents reedy marshes and mustard-fields, or wherever the vegetation is luxuriant, it rarely alights upon the plants, but almost invariably keeps to the ground, where it runs with tail upraised, stopping every now and then to pick up an insect or to watch the intruder from the edge of its retreat." Von Heuglin also says (Orn. N.O.-Afr. p. 336) that it arrives in small flocks in September, and wanders southwards to Senaar and Abyssinia. He also met with it in Northern Arabia and on the borders of the Red Sea. It frequents hedges, gardens, arundo thickets and ditches, and is found in the desert under tamarisks and in the desert-grass; on the coast it is met with amongst the soda-plants and on the open places. I may here remark that the notes on the Bluethroat in North-eastern Africa refer to the present as well as to the white-spotted species, both being found there, but in the western portion of Northern Africa the latter alone occurs.

To the eastward the present species is met with as far as Eastern Siberia and China; and, excepting in a few isolated cases, the white-spotted bird has not been observed to the eastward of Europe proper. Dr. G. Henderson met with it in Yarkand, and states that it "was only obtained at the 'Khush Maidan,' or Happy Plain (so called on the *lucus a non lucendo* principle, it being one of the most miserable deserts in creation), at an elevation of 16,000 feet,—at Shahidulla, at about 11,000 feet—and at Sanjan, about 6000 feet, where, by the way, one quite young bird was obtained, proving that this species also breeds in Yarkand. In each case the specimens were obtained in the immediate neighbourhood of running water. They differ in no way from specimens procured in various parts of the plains of India during the cold season. Of course to the plains it is merely a winter visitant; and heretofore its breeding-domicile has been unknown, its nest never having been met with in the Himalayas, so far as they are open to European travellers." Herr von Pelzeln, in his notes on the ornithology of Thibet and the Himalayas (Ibis, 1868, p. 311) records it from Sirinagur, Saleskote, Zangra, and Kargil; and Mr. A. O. Hume says (Stray Feathers, p. 190) that "it occurred but sparingly and only in the better-cultivated portions of Sindh. Larkhana and Mehur were the only places where I noticed several pairs on the same day. All these birds are analogous to what I take to be the true *suecica*, having red throat-patches; the *leucocyana* type, with the white satin throat-patch, is of very rare occurrence, and I have only succeeded as yet in procuring two in India." Dr. Jerdon (B. of Ind. ii. p. 153) says that *C. suecica* is found all over India in suitable localities, and is migratory, leaving for the north in March and April. Dr. A. Leith Adams records it (P. Z. S. 1858, p. 492) from the Punjab, it being common round Peshawur; Captain Beavan obtained it at Barrackpore and Umballah, Major Irby in Oudh and Kumaon; and Mr. Blanford (Journ. As. Soc.

Beng. 1872, p. 53) found it in Sikkim, where he observed it in September and October during migration; he shot one at Momay-Samdong. According to Mr. Holdsworth (P. Z. S. 1872, p. 454), Mr. E. L. Layard obtained it in Ceylon in the month of March; and Lord Walden informs me that he has lately received it from the Andaman Islands.

It is not uncommon in Siberia; and I have specimens from Dauria. Dr. G. Radde writes (Reis. im Süd. von O. Sib. p. 254) that it arrived at the Tarei-nor about the 6th of May, and on the 9th of that month larger numbers were seen. On the return migration the first was seen on the 16th of August; and on the 20th they had all left. Von Middendorff did not observe it on the Taimyr; but on the Boganida (70° N. lat.) it bred not uncommonly, although none were observed previous to the 13th of June, O. S. On the 18th of July unfledged young were seen; and by the end of that month they were fully fledged. On the 18th of August both young and old birds collected to leave. At Udskoj-Ostrog none were seen until the middle of May, and fledged young were found on the 13th of July.

It occurs in China during migration; and specimens in the collection of Mr. Swinhoe are similar to those from North-eastern Europe. This gentleman observed it at Tientsin, and also obtained it (Ibis, 1867, p. 394) in Amoy in January 1867.

Although by most authors the Bluethroat is placed in the same genus with the Redstarts, and, indeed, as pointed out by Professor Newton, any structural characters that can be found to separate them must be most trivial, still I have deemed it most advisable, looking at the great difference in habits, mode of reproduction, and colour of eggs, to keep the Bluethroats apart from the Redstarts. My first acquaintance with the present species in a state of nature was made at Uleåborg, in Finland, one bright evening in May, when, wandering about on the bush-covered swampy meadows near that town, I heard a note with which I was quite unfamiliar. It was a peculiar metallic sound, well described by Mr. Godman as being like that produced by striking a metal triangle; and at first I could not discover whence it came. At last, however, I caught sight of a small brownish bird creeping about amongst the bushes after the manner of our common Hedge-Sparrow. I followed it for some time, and observed that it was accompanied by another; but both were so shy that for long I could not get a shot at either; but at last, as they crossed a small open patch between two clumps of low bushes, I fired, and knocked one over, and on picking it up was delighted to find an adult male Bluethroat in full plumage, a bird I had till then never seen alive. I followed the other, which I suppose to have been a female, but did not succeed in getting it. In its habits the present species, so far as my own experience goes, somewhat resembles the Hedge-Sparrow, except that, unlike that species (which frequents gardens and dry localities), it is almost invariably found in swampy low places, always in the immediate vicinity of water. It creeps between the bushes, reeds, or rank herbage with the greatest facility, and when pursued attempts to hide and thus escape notice. Mr. H. W. Wheelwright, in his work on the ornithology of Lapland, says that it arrived at Quickjock "the latest of all the Warblers; for I did not see one till early in June, when they appeared to come dropping in singly, stayed a few days in the lowlands, and then made their way up at once to the flat swampy meadows at the foot of and between the fells. Here, among the stunted willow bushes, always near water, you might see the female creeping from branch to branch, like a mouse, while the male, perched on the top of a high bush or a dead tree, would

trill out his clear, loud, rich song. The note of the Blue-throated Warbler is certainly louder and more varied than that of any other Warbler; and it well deserves its Lap name of 'saddan kiellinen' (or hundred tongues)—totally different from any thing I ever heard before; in fact it is quite impossible to describe on paper." Messrs. P. and F. Godman, writing on the ornithology of Bodö (Norway), state (Ibis, 1861, p. 82) that "this bird seemed quite to take the place of our Robin in these latitudes; in almost every farmyard, and near every house, a pair were to be found. They had one remarkable note that particularly attracted our attention. The bird would sit on the top of a bush, every now and then flying up in the air and uttering a note that is best described by saying it was much such a sound as is produced by striking a metal triangle. We first saw the bird May 28th, after which time they were plentiful throughout the lower district." In India, according to Dr. Jerdon (B. of I. ii. p. 153), "it is found in the open country, in hedge-rows, gardens, fields of pulse and *Cucurbitaceæ*, corn-fields, and reeds or long grass, especially near water. In gardens it haunts the pea-rows, beans, and any thick cover; and it feeds on the ground, running along and picking up various insects. It makes its way very adroitly through thick reeds; and when observed it tries to conceal itself. When feeding, it occasionally displays its rufous tail, and sometimes jerks it up, but does not quiver it like the Redstarts. I have seen it feeding close to houses in various parts of Central India."

In its mode of nidification, and especially in the coloration of its eggs, the Bluethroat resembles the Nightingale much more closely than the Redstart. Its nest is cup-shaped, constructed of dry grass-bents on a loose foundation of leaves and grass, and is placed on the ground, generally on the side of a bank, but often in a quite open situation, and always in some low swampy locality. The eggs, usually five or six in number, are of a dull dark greenish or brownish olive-colour, similar in shade to those of the Common Nightingale; but some varieties are much paler than others. In size they are much smaller than those of the Nightingale, measuring from $\frac{31}{40}$ by $\frac{23}{40}$ to $\frac{32}{40}$ by $\frac{23}{40}$ inch respectively. Some I have from Norway are marked, on a pale, dull, greenish ground, with innumerable almost confluent dull russet-brown markings. The eggs are, in the high north of Scandinavia, usually deposited about the middle of June. Messrs. Harvie Brown and Alston found it breeding on the Valders-fjeld in Norway, and send me the following notes:—"In Norway we found this species in somewhat small numbers on the Fille-fjeld in 1871, at an elevation of over 3000 feet, and more plentifully on the Valders-fjeld at a lower elevation. We obtained two nests only, which were built of moss and grass, lined with finer grass, and carefully concealed under the low trailing juniper bushes (*Juniperus communis*). From one of these on the 1st July we shot the female, which proved to be in the plain brown-and-white plumage, without any trace of red or blue on the throat (*cf.* Newton's Yarrell, i. p. 328).

"Herr O. J. Lysne, when collecting on the Dovre-fjeld in 1873, found this species extremely abundant, 'as plentiful as *Anthus pratensis* was on the Fille-fjeld.'"

The food of the Bluethroat consists of worms, seeds, and insects and their larvæ. Mr. Collett writes that he found the stomach of a female to contain "seeds and a *Clausilia*, exclusive of insects. In the stomachs of examples (young birds and adults) procured in Finmark were found only insects (coleoptera, tipulidæ) and their larvæ."

Particulars as to the specimens figured are given above in the explanation of the Plates.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a, ♂. Christiania, April 19th (*Collett*). *b*, ♀. Thelemarken, August 2nd (*Collett*). *c*, ♀. Alten, Finmark, July 14th, 1872 (*Collett*). *d*, ♂. Uleåborg, Finland, May (*H. E. D.*). *e*, ♂. Rovaniemi-Lapland (*Heikel*). *f*, ♂. Allack, Ural, July 18th, 1872 (*Meves*). *g*, ♂. Ural, August 14th, 1872 (*Meves*). *h*, ♂. Archangel, May 18th, 1873 (*Piottuch*). *i*, ♂. Mezen, Russia, June 14th, 1873 (*Piottuch*). *k*, ♀. Mezen, Russia, July 2nd, 1873 (*Piottuch*). *l*, ♂. Lake Baikal, June 1868 (*Dybowsky*). *m*, ♂. Djeddah, Red Sea (*S. S. Allen*). *n*, ♂. Central Asia (*Verreaux*). *o*, ♀. India (*Marshall*). *p*, juv. Nirtschinsk, Russia, July 23rd, 1867 (*Meves*).

E Mus. E. R. Alston.

a, ♀. Fille-fjeld, Norway, June 1st, 1871 (*E. R. A.*). *b*, ♂. Valders-fjeld, Norway, July 11th, 1871 (*E. R. A.*). *c*, ♀. Valders-fjeld, Norway, July 6th, 1871 (*Lysne*). *d*, ♂. Archangel, Russia, July 1st, 1872 (*Piottuch*).

E Mus. G. E. Shelley.

a, ♂. Egypt, March 6th, 1868 (*Shelley*). *b*, ♂. Egypt, March 7th, 1868 (*Shelley*). *c*, ♀. Egypt, March 31st, 1871 (*Shelley*).

E Mus. F. Bond.

a, ♂. Sweden, June 3rd, 1862 (*Wheelwright*).

Genus ERITHACUS.

- Motacilla* apud Linnæus, Syst. Nat. i. p. 337 (1766).
Sylvia apud Scopoli, Ann. I. Hist. Nat. p. 156 (1769).
Erythacus apud Cuvier, Leç. d'An. Comp. tab. ii. (1800).
Curruca apud Leach, Syst. Cat. M. & B. Brit. Mus. p. 25 (1816).
Ficedula apud Boie, Isis, 1822, p. 553.
Dandalus apud Boie, Isis, 1826, p. 972.
Rubecula apud C. L. Brehm, Vög. Deutschl. p. 360 (1831).
Rhondella apud Rennie, in White's Hist. of Selborne, p. 437 (1833).
Lusciola apud Keyserling & Blasius, Wirbelth. Eur. p. 58 (1840).

THIS small group, all the species belonging to which have the breast red in both sexes, inhabits the Palæarctic Region only, one species being found in Europe, one in Persia, and one in Japan.

In habits the Redbreasts assimilate closely to the true Thrushes; but they are also nearly related to the Bluethroats. They frequent woods, groves, and gardens, and are fond of inhabited places, showing but little fear of man. Like their allies they are chiefly insectivorous and obtain their food chiefly on the ground, where they hop with depressed wings, the tail being held horizontal. They are very sweet songsters; and their song may be heard in fine weather at most seasons of the year. They build a tolerably large cup-shaped nest, which they place on the ground, and deposit five or six reddish white eggs freckled with dark red. Their flight is short, direct, and rapid.

Erithacus rubecula, which is the type of the genus, has the bill formed much like that of a Thrush, narrow and depressed at the base, inflected towards the point, slightly but distinctly notched; mouth narrow, the basirostral bristles tolerably long; wings rounded, consisting of eighteen quills, the first about half as long as the second, the fourth longest; legs rather long, the tarsus with a long undivided piece and three inferior scutellæ; outer toe rather longer than the inner, and united at its base to the middle; plumage soft, blended; tail moderately long, nearly even, slightly decurved.



REDBREAST
ERITHACUS RUBECULA

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ERITHACUS RUBECULA.

(REDBREAST.)

- Motacilla rubecula*, Linn. S. N. i. p. 337. no. 45 (1766).
Sylvia rubecula (Linn.), Scopoli, An. I. Hist. Nat. p. 156. no. 231 (1769).
Sylvia rubecula (Linn.), Latham, Ind. Ornith. ii. p. 520. no. 42 (1790).
Erythacus, G. Cuvier (*Motacilla rubecula*, L.), Leç. d'An. Comp. tab. ii. (1800).
Curruca rubecula (Linn.), Leach, Syst. Cat. Brit. Mus. p. 25 (1816).
Ficedula rubecula (Linn.), F. Boie, Isis, 1822, p. 553. no. 129.
Dandalus rubecula (Linn.), F. Boie, op. cit. 1826, p. 972.
Dandalus pinetorum, C. L. Brehm, Isis, 1828, p. 1280.
Dandalus foliorum, C. L. Brehm, loc. cit. (1828).
Dandalus septentrionalis, C. L. Brehm, loc. cit. (1828).
Erythaca rubecula (Linn.), Swainson, Faun. Bor.-Amer. *Aves*, p. 488 (1831).
Rubecula pinetorum, C. L. Brehm, Vög. Deutschlands, p. 360 (1831).
Rubecula foliorum, C. L. Brehm, loc. cit. (1831).
Rubecula septentrionalis, C. L. Brehm, op. cit. pp. 361, 1029, pl. xxi. fig. 3 (1831).
Rubecula familiaris, Blyth, Field Naturalist, i. p. 424 (1833).
Rhondella rubecula (L.), Rennie, White's History of Selborne, p. 437 (1833).
Erithacus rubecula (Linn.), Macgillivray, Hist. Brit. Birds, ii. p. 263. fig. 160 (1839).
Lusciola (Erithacus) rubecula (Linn.), Keyserl. & Blasius, Wirbelth. Europ. p. lviii. no. 238, p. 191. no. 238 (1840).
Lusciola rubecula (Linn.), Schlegel, Rev. Crit. p. xxxii (1844).
Rubecula rubecula (Linn.), Bp. Consp. i. p. 295 (1850).

(The above by Lord Walden.)

Redbreast, *Robin*, *Robinët*, *Ruddock*, English; *Broinn-dearg*, Gaelic; *Rouge-gorge*, French; *Pisco de peitô ruivo*, Portuguese; *Pettiross*, Maltese; *Pettiroso*, Italian; *Picett*, *Cipett*, *Pettiross*, *Sbizett* in Lombardy; *Rothkehlchen*, German; *Roodborstje*, Dutch; *Rodkjælk*, *Nældekonje*, *Thomas-winter*, Danish; *Rödhakesånger*, *Rotgeln*, *Rödhane*, Swedish; *Rödstrubesanger*, Norwegian; *Kultarintakerttu*, Finnish; *Repel*, *Repeloff*, Russian.

Figuræ notabiles.

D'Aubenton, Pl. Enl. pl. 361. fig. 1; Werner, Atlas, *Insectivores*, pl. 48; Frisch, Vög. Deutschl. pl. 19; Fritsch, Vög. Eur. pl. 25. fig. 21; Sundevall, Sv. Fogl. pl. xii. figs. 1, 2; Gould, B. of Eur. pl. 98; id. B. of G. B. ii. pl. 48; Naumann, Vög. Deutschl. taf. 75. figs. 1, 2; Bettoni, Ucc. Lomb. tav. 109; Roux, Orn. Prov. pl. 206.

♂ *ad.* suprâ sordidè olivaceus, uropygio paullò clariore: remigibus saturatè brunneis, in pogonio externo vix olivaceo marginatis: rectricibus brunneis, versùs basin conspicuè et ad apicem vix olivaceo marginatis:

fronte, gulâ cum capitis lateribus usque ad oculos, jugulo et pectore superiore fulvescenti-rubris, qui color in colli lateribus cærulescenti-cinereo cingitur: pectore imo et abdomine albidis: hypochondriis et crisso olivaceo adumbratis: rostro nigricanti-brunneo: pedibus griseo-fuscis: iride fuscâ.

♀ *ad.* haud a mare distinguenda.

Juv. corpore suprâ olivaceo, pennis singulis flavicante maculatis et nigricante fusco terminatis: pileo ochraceo lavato: remigibus et rectricibus ut in adulto, sed latiùs olivaceo marginatis, secundariis fulvido apicatis: corpore subtùs sordidè albido, nigricante fusco notato, pectore et hypochondriis flavicante ochraceo lavatis.

Adult Male (Hampstead, June). Upper parts generally olive-brown, rather brighter in colour on the rump; quills dark brown, narrowly margined on the outer web with olive; tail-feathers dark brown, more broadly margined towards the base and very narrowly towards the tip with bright olive; forehead, loreal space, and entire throat and breast rich orange-red; sides of the neck, between the red of the breast and the olive of the upper parts, slate-blue, this colour extending as far down the breast as does the red; abdomen white; flanks and vent washed with olive-brown; bill dark brown, lighter at the base; legs brown; iris very dark brown. Total length 5·2 inches, culmen 0·55, wing 2·9, tail 2·5, tarsus 1·0.

Young (Aboyne, Scotland, 23rd September). Upper parts dull sandy brown, on the head with a yellowish tinge, on the back washed with olive; feathers on the head, back, and wing-coverts broadly tipped with blackish brown, giving a spotted appearance; quills as in the adult, but the secondaries have fulvous tips; tail as in the adult; underparts dirty white, on the breast and flanks washed with yellowish brown, and marked with blackish brown; bill and legs rather paler than in the adult.

THE Redbreast or, as it is more frequently called, the Robin, is a common species throughout Europe, inhabiting during the summer season even the northern countries up to 67° N. lat., but migrating southward at the approach of winter, a few remaining in Central and the northern portion of Central Europe during tolerably mild winters. With us in Great Britain it is, however, chiefly, though not exclusively, a resident; for, although from its habit of frequenting the neighbourhood of human habitations during the winter, it appears numerous at all times of the year, still accurate observers record a considerable variation in its numbers according to the season of the year. It is common, and generally dispersed over the British Islands, and breeds as far north as the Orkneys, but has not been met with breeding in the Shetlands. Formerly it was exceedingly rare in the Hebrides, but has lately been more often met with in those islands. Mr. Robert Gray writes (B. of W. of Scotl. p. 82) that "when the late Mr. John Macgillivray wrote his account of the birds of the Hebrides, he was able to mention but one locality in these islands for this familiar bird, namely—Rhodil in Harris. Since that time, however, it has been found in various other places. On the west side of North Uist it is frequently seen at Paible and in one or two other localities. It is likewise now a common bird in some parts of Lewis, especially in the town of Stornoway and its attractive vicinity, where it may be seen as numerously, perhaps, as in the most fertile districts of Scotland."

In Ireland, as in England, it is common throughout the country at all seasons of the year. According to Mr. H. C. Müller it occurs not unfrequently in the Færoes in the autumn, and in 1856 they remained till February. Mr. R. Collett states that it occurs in Norway, breeding even

within the Arctic Circle, where it has been observed in 67° N. lat. In Western Norway it has occasionally been known to remain over the winter, but usually leaves in October, returning again in March or April. In Sweden, Professor Sundevall writes (Sv. Fogl. p. 57), it arrives very early and leaves late, occurring as high as Jemtland (64° N. lat.); and Lowenhjelm saw it at Skjellefteå, in nearly 65° , but it has not been observed in Lapland. In Finland it is distributed generally throughout the country, and is common; and Mr. Sabanäeff informs me that it "is tolerably common in Central Russia, where it occasionally winters. How far northward it ranges I cannot with certainty say; but it is found in the Governments of Vologda and Viatka. It is generally seen amongst pine-growth. It is also met with on the Ural, more numerous on the western slope; but I saw it in the Pavdinsky Dacha; in the pine-woods of the Ekaterinburg Ural it is rare, and was not met with at all, not even during migration, in the birch-woods of the Bashkir country."

Throughout Germany and the Baltic provinces the Redbreast is common during the summer season; but only a few remain over the winter in Northern Germany. In the Tyrol, however, Mr. Stejneger records it (J. f. O. 1871, p. 124) as common throughout the winter in South Tyrol. Dr. Fritsch states that in Bohemia it occurs only from the latter part of March to the end of October; and Count Casimir Wodzicki (J. f. O. 1853, p. 436) met with it throughout the Carpathians, where it breeds twice in the year, and is frequently selected by the Cuckoo to act as a foster parent to her progeny. Passing to Northern Germany, again, we find it every where common during the summer, arriving in March and leaving in October, but only stragglers remain over the winter; and Kjærbølling (Danm. Fugl. p. 176) says the same respecting its occurrence in Denmark, where, during mild winters, a few Robins also remain. Baron de Selys-Longchamps refers to it as common and resident in Belgium; but Professor Schlegel says that in Holland the major portion leave in October, only a few remaining over the winter.

In France it is common, and, like many other small birds, is frequently seen on the table served up as "gibier;" in the north of France it is numerous during the summer; but it would appear, according to Jaubert and Barthélemy-Lapommeraye, that in Provence it is merely an autumn visitant, and takes its departure after the cold weather has passed.

In Portugal it is, Professor Barboza du Bocage states, common; but he does not say if it is resident or migratory. Mr. Howard Saunders records it (Ibis, 1871, p. 211) as common in Southern Spain "in autumn and winter;" and he says, "I was informed at Granada that it retired to the high ground to breed, but I never had its eggs brought to me." Major Irby, however, writes to me that he found it "very common and resident in the vicinity of Gibraltar, numbers nesting in the cork-wood during April. On the rock they only occur from October to March. In winter they are much more numerous."

Passing eastward we find it, according to Bailly, common in Savoy during the best part of the year, many, however, migrating southward in the autumn; and Savi, Salvadori, and Bettoni all refer to it as a resident in Italy. Mr. C. A. Wright (Ibis, 1864, p. 66) states that it is a winter resident in Malta; and Lord Lilford (Ibis, 1860, p. 228) also found it common in Corfu, where numbers arrive about the end of October, and leave again in March; but he states that it does not appear to be very abundant on the mainland. Lindermayer (Vög. Griechenl. p. 105) states that it is a resident in all the Greek provinces, and even on the islands. It is common in

the gardens of the town of Athens from October to March, when it migrates to the northern provinces, where it breeds. Messrs. Elwes and Buckley met with it commonly in Turkey; and Professor von Nordmann says the same regarding its occurrence in Southern Russia. It visits Odessa in the autumn; but the larger portion migrate further south, and the few that remain often perish during the cold season. On the return migration they appear in March. He met with it in Ghouriel at great altitudes in the months of June and July. Ménétries records it (Cat. rais. p. 35) as occurring at Lenkoran, in the Caucasus, where, however, it is not common. Strickland does not refer to it as observed by him in Asia Minor; but Canon Tristram found it generally distributed throughout Palestine in the winter, but none remain later than February.

It visits Lower Egypt during the winter, where, according to Von Heuglin (Orn. N.O.-Afr. p. 335), it sometimes remains as late as the middle of March; and Captain Shelley (B. of Egypt, p. 87) writes that "it is confined to Lower Egypt, where it is only a winter visitant. It is as tame and familiar in the sunny climate of Egypt as it is in England, and appears to welcome the stranger as he sits in the shade of the sycamore tree, by hopping from bough to bough, and peering inquisitively at him, as though it expected to recognize a friend in the traveller."

Canon Tristram met with it commonly in Algeria during the winter, in the oases of the Sahara; and Loche records it as tolerably common, more especially during the season of migration, in all three provinces of Algeria. Major Irby informs me that "many breed near Tangiers; but on both sides of the Straits there is a great accession to their numbers during the winter months." It is found on the Azores, where, according to Mr. F. DuCane Godman (Nat. Hist. Azor. p. 23), "though common in the eastern and central groups, the Redbreast does not occur in the two western islands. Through the kindness of some of my friends I have been able to compare my specimens with examples from Algeria, Tunis, and Southern Italy, with which I find that they exactly agree in their light-coloured plumage. Mr. Gould showed me one he shot in Teneriffe, which is precisely similar to our British and darker form." The same gentleman also met with it in the Canaries and Madeira, and writes (Ibis, 1872, p. 173) that examples from these islands are identical with the darker northern form. It is seldom found, he says, near the coast in Teneriffe and Gran Canaria; but at an elevation of from 2000 to 8000 feet above the sea it is very common. Dr. C. Bolle (J. f. O. 1854, p. 454) says that it inhabits the wood at Teneriffe; and he observed it in the wood near Laguna, where it seems to be resident. In October 1852 he met with it in the gardens of Realejo, near Orotava.

To the eastward the Redbreast is recorded by Mr. Keith Abbott (P. Z. S. 1834, p. 133) from Trebizond; and Messrs. Dickson and Ross (P. Z. S. 1839, p. 120) met with it near Erzerum in November.

De Filippi records it from near Khend and the Ghilan, in Persia; and I have received from Mr. Blanford specimens both of the ordinary form and also of a closely allied but fairly distinct species, also obtained by him in Persia, and named by him *Erithacus hyrcanus*, differing chiefly in having the tail-feathers broadly margined with bright ferruginous, and the red on the throat and breast richer in colour.

In Japan the present species is replaced by a closely allied form (*Lusciola akahige*), differing, however, in having below the red on the breast a band of blackish, which on the flanks becomes

greyish black. This species is described and figured by Messrs. Temminck and Schlegel in the 'Fauna Japonica,' p. 55, pl. xxi. B. Judging from this plate the entire upper parts are more ferruginous than in *E. rubecula*.

Cheerful, pert, and confiding, the Redbreast is one of the best-known and most popular of our birds. Essentially a bird (if I may so term it) of the nursery, its name recalling one's earliest associations, and reminding one of the tale of the babes in the wood who were covered with leaves by the Redbreasts, and other nursery legends in which the Redbreast so frequently reappears on the scene, it is a universal favourite with us; and even the schoolboy, when intent on filling his string with eggs, will pass by and leave unmolested the nest of the Robin, while other, less-sacred nests are ruthlessly pillaged. During the summer season the Redbreast betakes himself to the groves and country lanes, few remaining near human habitations compared with what are found at other seasons of the year, though almost every garden can boast of a pair which have taken up their summer quarters in it or its immediate neighbourhood. So soon, however, as the winter sets in and food becomes scarce, the Redbreast visits the vicinity of human habitations, where he finds a more ample supply of food than can be met with in the fields or woods; and his confiding habits and sprightly appearance always ensure him a hearty welcome and a share of the scraps and crumbs which are thrown out or which are placed for him on the window-sill. One particular Redbreast will generally attach himself to the gardener, follow him about when at work, and, when he is turning over the soil, will watch for the worms as turned up; or when the gardener sticks his spade into the ground to take a rest, it will perch on the handle and carol forth its sweet song, or else it sits with feathers puffed out watching with curious askant gaze, as if waiting for another chance of picking up a worm. Though, as before stated, the majority of the Redbreasts are scattered over the country during the breeding-season, yet many remain and build in the immediate vicinity of a house, or in the outbuildings adjoining it; and many are the instances on record of the peculiar localities selected for the purposes of nidification. The Rev. F. O. Morris records some curious positions in which nests of the Redbreast have been found, as for instance one being the hole left by a knot in one of the timbers of a ship under repair; and even during the deafening sound of the driving of the trenails the birds did not forsake. Bishop Stanley gives an instance of one building in a pigeon-hole bookshelf in a school which was constantly frequented by seventy children; another pair affixed their nest to the church bible in the parish church of Hampton, in Warwickshire; and a similar instance occurred at Collingbourne-Kingston church, in Wiltshire. I have seen nests in a flower-pot placed away on the tool-house shelf, in an old jug, in a cast-off old shoe placed in a corner of an outhouse, in a letter-box, and in the upper part of a pump which was seldom used. Mr. Jesse gives the following instances of the pertinacious familiarity of the Redbreast, and of its love for its young, which I think well worth transcribing. A Robin, he writes, "lately began its nest in a myrtle which was placed in the hall of a house belonging to a friend of mine in Hampshire. As the situation was considered rather an objectionable one, the nest was removed. The bird then began to build another on the cornice of the drawing-room; but as this was a still more violent intrusion, it was not allowed to be completed. The Robin, thus baffled in two attempts, began a third nest in a new shoe, which was placed on a shelf in my friend's drawing-room. It was permitted to go on with its work until the nest was completed; but as the new

shoe was likely to be wanted, and as it would not be benefited by being used as a cradle, the nest was carefully taken out and deposited in an old shoe, which was put in the situation of the new one. Here what remained to be done to the nest was completed: the under part of the shoe was filled up with oak leaves; the eggs were deposited in the nest, and in due time hatched, the windows of the room being always left a little open for the entrance and egress of the birds. My friend informed me that it was pleasing to see the great confidence the Robins placed in him. Sometimes, in the morning, the old birds would settle on the top of his glass, nor did they seem the least alarmed at his presence." He further writes that "a gentleman had directed a waggon to be packed, intending to send it to Worthing, where he himself was going. For some reason his journey was delayed; and he therefore directed that the waggon should be placed in a shed in the yard, packed as it was, till it should be convenient for him to send it off. While it was in the shed a pair of Robins built their nest among some straw in it, and had hatched their young just before it was sent away. One of the old birds, instead of being frightened away by the motion of the waggon, only left the nest from time to time for the purpose of flying to the nearest hedge for food for its young; and thus alternately affording warmth and nourishment to them, it arrived at Worthing. The affection of this bird having been observed by the waggoner, he took care in unloading not to disturb the Robin's nest; and the Robin and its young returned in safety to Walton Heath, being the place from whence they had set out, the distance travelled not being less than one hundred miles. Whether it was the male or female Robin which kept with the waggon I have not been able to ascertain, but most probably the latter; for what will not a mother's love and a mother's tenderness induce her to do."

Usually the nest of the Redbreast is placed in some grassy bank in a well-sheltered locality; and the number of eggs varies from five to seven, the former being, so far as my own personal observation is concerned, the usual number. In colour the eggs are white, with a slight reddish tinge, and are spotted all over the surface of the egg with more or less distinct reddish dots and blotches, these being often almost confluent. Two eggs in my collection are almost pure white, except that a few spots are collected round the larger end, forming a sort of wreath round it. Eggs in my collection vary in size from $\frac{2.3}{4.0}$ by $\frac{3.0}{4.0}$ to $\frac{2.4}{4.0}$ by $\frac{3.3}{4.0}$ inch, those from Southern Europe being a trifle smaller than British specimens. Mr. Carl Sachse, writing to me from Altenkirchen, Rhenish Prussia, where the Redbreast is very common, says that "it arrives in March and leaves in September or October, some, however, wintering there. The nest is usually found in rotten logs on the banks of the stream, in ruts in deserted roads, under filbert-trees, &c.; it is always covered by something, even if it be only by a bunch of grass. I have also found it in hollow trees $1\frac{1}{2}$ metre above the ground. Most nests are found in the dense fir- and beech-woods. Once I found its nest in a hollow pear-tree, 1.3 metre from the ground; and 2 metres higher in the same tree *Parus major* had deposited its eggs. It lays from six to seven eggs, and breeds twice in the year. I have taken its eggs from the 1st May to the 6th July, and have frequently found Cuckoo's eggs in nests of this species." Macgillivray gives some excellent notes on the nidification of the Robin as follows:—"Although most of the Redbreasts retire from the vicinity of human habitations in summer, and betake themselves to the woods and hedges, yet some go to no great distance, but take up their abode in a hedge, or a copse, or on a mossy bank, close to their winter haunts. It does not appear that they remain paired in winter; at all events they

are seen in pairs by the end of February; and sometimes the young have been found in their nests so early as the end of March. In general, however, the eggs are deposited about the beginning of April. On the 9th of May, 1831, I saw a young Robin, nearly fully fledged, in a hedge at St. Bernard's Well, in Edinburgh, the season being rather backward; and authors have given a much earlier period for their appearance. On the 2nd of June, 1837, after a remarkably severe winter and spring, my son brought me two scarcely fledged birds, which, with the rest, scrambled from the nest; and these were in all probability of the first brood.

"The nest is placed under a hedge or bush, on the ground, among herbage, or on a mossy bank. I have never met with it in a tree, shrub, or hedge. It has been variously described by authors, some of whom have given a most marvellous account of it, stating that it is constructed of oak leaves, arched over, and having a long porch built of the same materials before the door. Here is one found in Dalhousie woods, some miles southward of Edinburgh, on the 22nd of April, 1837. It is bulky, rather loosely constructed, its external diameter five inches and three quarters, its internal diameter two inches and a half, its walls an inch and three fourths in thickness. Its basis is composed of moss and decayed leaves of trees, with broad blades of grass, the middle layer of fine stalks and leaves of grass, mosses of several species, loosely interwoven, with a few skeleton leaves, the lining of hairs and wool of a white colour, and a quarter of an inch thick. The eggs in this nest were five; and their general number is five or six. They are of a regular oval form, averaging nine and a half twelfths in length, and seven and a fourth twelfths in their greatest breadth, of a delicate reddish white, faintly freckled with light purplish red, the markings thickest on the larger end, and sometimes forming a kind of belt there.

"In summer the Robin, although not at all shy, is less frequently observed, as it prefers the woods, thickets, and hedges to the open fields. Although pugnacious enough on ordinary occasions, it is not nearly so bold as many other small birds when its nest is approached by man, but keeps hopping about at some distance, and uttering a feeble cheep, without making any manifest attempts to decoy him away; yet it will attack a cat, and is more than a match for any bird of its own size.

"To these observations of my own, I add the following by my friend Mr. Weir:—"It is a mistaken notion that the Redbreasts during summer remove from the habitations of man, and build their nests in wild and secluded places. At a little distance from my stable a pair have built on the same bank for several successive years. Another pair built on the side of a ditch, a few feet from the door of my shrubbery, and brought to maturity six young ones, although people passed and repassed the nest many times during the day. Another pair have built for several years at the bottom of a hedge not far from my house, and now have young ones (10th June, 1837) which are flying about and are very tame. Many of those, however, which in summer had resided at a distance, approach the abodes of man in winter; and when there is a fall of snow or a severe frost, there is scarcely a cottage or a house in the country at the doors of which they fail to make their appearance. Sometimes they even tap at the windows with their bills, as if to solicit admission; and when it is given to them, they will hop up and down the floor, and pick up the crumbs. In every age their familiarity has engaged the attention, and secured to them the protection of mankind. In my parish they are held as sacred by the bird-searching youths, as the Vultures are in the neighbourhood of Grand Cairo, where no one is

permitted to destroy them; for very few even of the most daring and hard-hearted amongst them will venture to destroy either them or their nests. So deeply have their minds been impressed by the recital of the well-known and affecting history of the babes of the wood, who, after they had been left to perish with hunger, were covered with leaves by these little creatures.

“During the months of autumn and amidst the desolation of winter, when almost all the songsters of the woods are silent, we listen to their pleasing notes with delight. I have known several curious facts relative to their tameness, of which I shall relate only one at present. In the summer of 1835 a male Robin in my garden became so tame that he picked worms from the hand of the gardener, and in the middle of the day, when the latter took his dinner, he constantly attended for the purpose of obtaining a portion of it. Upon the knee of my wife I have repeatedly seen him alight, and take bread out of her hand as familiarly as if he had been tamed from the nest. To me he likewise became very much attached. He continued so during the autumn. One cold morning in the beginning of winter, as I was standing at the door of my house, having heard my voice he immediately flew to me, and, seeming to claim my protection, followed me into the parlour, where he was quite at ease. I caught him and put him into my garret, in which, during the winter, he sang most delightfully. Being sorry to see him alone, I got for him a helpmate to cheer him in his confinement. About the middle of April I set them at liberty, and, to my surprise, a few days after I discovered a very neat nest which they had built. The outside of it was composed of the stalks of dried horehound, which I had suspended from the roof as a medicine for the cold; and the inside was lined with a few feathers, and the down of the ragwort which I had there kept for my Bullfinch. It shows to what shifts birds have recourse when deprived of the proper materials for the construction of their nests. About eight days after this, whilst I was sitting in the parlour, my old friend flew in, and immediately recognized me. After keeping him for two weeks I put him out, when he flew to the garden, where he remained during the summer, and with his partner reared a brood of six fine Robins.”

Thompson, in his ‘Birds of Ireland,’ says that “in the very mild winter of 1831–32 a Redbreast very frequently joined a friend and his lady residing at Milltown in the Falls, at breakfast; without invitation, it ate of the bread and butter on the table, and, when not so employed, made itself quite at home by perching on the toasting-fork at the fire. In summer it built in one of the outhouses, and visited the kitchen daily; its song was in August poured forth in the hall. In this house, also, a Redbreast once built its nest in the fold of a bed-curtain in an occupied chamber. Its absence being preferred to its presence there, the room window was closed against the intruder, in consequence of which the first egg was laid outside on the bare window-sill. This circumstance caused pity for the birds; the window was reopened, and the egg placed in the nest, where the usual number were duly deposited and incubated.”

The song of the Robin is clear, mellow, and tolerably powerful. It sings at almost all seasons of the year, except in the winter; and the song is uttered from the top of a tree, wall, or some elevated perch, being more generally heard in clear, calm evenings. “Several good observers,” writes Professor Newton, “have expressed their belief that when at evening a Redbreast takes its stand on the topmost twig of a tree or other elevated position, and there continues to sing, a fine day on the morrow may be safely predicted. This evening song, however, is not to be confounded with the peculiar call-note uttered by the bird when ordinarily retiring to rest.

It is one of the latest of diurnal birds to go to roost, and one of the earliest to be seen moving in the morning."

One trait in the character of the Robin I must not omit to mention; and this is its extreme pugnacity. Not only will it drive away Sparrows or other intruders who may come to share in the crumbs thrown out for the birds, but it brooks no other of its species in the domain which it has chosen for itself and mate; and in the autumn, when it returns to its favourite lawn and perch on the window-sill, if an intruder be found trespassing on its ground, a sharp battle ensues, and the new comer, usually a bird of the year, and probably one of the brood of the original tenant, most frequently gets worsted, and has to seek other quarters.

During the spring and early summer the Redbreast subsists chiefly, if not entirely, on insects and earthworms; but in the late summer it eats berries and fruits as well as what insects it can find. In the winter it frequents the yards and gardens adjoining inhabited places, and picks up what crumbs and refuse are cast out, or follows the gardener and searches for insects or earthworms amongst the soil turned over by the spade.

The specimens figured and described are in my own collection; full particulars as to locality are given above with the descriptions.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a, ♂. Hampstead, June 1871 (*Davy*). *b*, juv. Hampstead. *c*, juv. Aboyne, Scotland (*R. B. Sharpe*). *d*, ♂. Hareskov, Denmark, October 12th, 1870 (*A. Benzon*). *e*, ♂. Piedmont (*Count Salvadori*). *f*, ♂ ad. Smyrna, October 27th, 1871 (*Dr. Krüper*). *g*. Crimea (*Whitely*).

E Mus. H. B. Tristram.

a. Castle Eden, Durham. *b*. Greatham, December 2nd, 1865. *c*, ♀. Greatham, March 6th, 1866. *d*, ♂. Esfia, December 16th, 1863 (*H. B. T.*).

E Mus. Ind. Cal.

a, ♀. Shiraz, July 1870 (*W. T. Blanford*).

E Mus. J. H. Gurney, jun.

a, ♀. Greatham, Durham, December 16th, 1865. *b*, ♂. Greatham, March 5th, 1866. *c*, juv. Hampstead, May 1871 (*Davy*). *d*, juv.

E Mus. Howard Saunders.

a, ♂. Valencia, March 15th. *b*, ♀. Valencia, May 1st. *c*, ♂. Granada, October. *d*, ♀. Seville, November. *e*, ♂ first year. Malaga, October 13th.

Genus CALLIOPE.

Motacilla apud Pallas, Reise Russ. Reichs, iii. App. p. 697 (1776).

Turdus apud Gmelin, Syst. Nat. i. p. 817 (1788).

Accentor apud Temminck, Man. d'Orn. iii. p. 172 (1835).

Calliope, Gould, B. of Eur. pl. 114 (1836).

Lusciola apud Keyserling & Blasius, Wirbelth. Eur. p. 58 (1840).

Erithacus apud Degland, Orn. Eur. i. p. 514 (1849).

THE Rubythroats form a small but distinct group, allied on the one side to the true Nightingales, and on the other to the Bluethroats—in habits, however, resembling the latter much more than the former; for they often frequent damp localities where there are plenty of bushes or trees.

The Rubythroats inhabit the Palæarctic and Indo-Malayan Regions, only one species being found in the Western Palæarctic Region. They are chiefly, if not entirely, insectivorous; they construct a slightly formed domed nest of dried grasses, and deposit four or five greenish blue eggs slightly spotted with very pale red. They are all said to be good songsters.

The young of these birds are said to be spotted.

Calliope camtschatkensis, the type of the present genus, has the bill like that of the Nightingale, but rather longer; the first primary is short, but extends considerably beyond the wing-coverts, the second is about equal to the seventh, the third and fourth being the longest; tail moderate, slightly rounded; legs rather long; tarsus covered in front with one long plate and four inferior scutellæ.

All the Rubythroats have, in adult male plumage, a rich-red throat-patch.



RUBY THROATED WARBLER.
CALLIOPE CAMTSCHATKENSIS

CALLIOPE CAMTSCHATKENSIS.

(RUBY-THROATED WARBLER.)

- Motacilla calliope*, Pall. Reise Russ. Reichs, iii. App. p. 697. no. 17 (1776).
Kamtschatka Thrush, Lath. Gen. Syn. ii. p. 28 (1783).
Turdus camtschatkensis, Gmel. Syst. Nat. i. p. 817 (1788, ex Lath.).
Turdus calliope (Pall.), Lath. Ind. Orn. i. p. 331 (1790).
Accentor calliope (Pall.), Temm. Man. d'Orn. iii. p. 172 (1835).
Calliope lathamii, Gould, B. of Eur. pl. 114 (1836).
Lusciola (Melodes) calliope (Pall.), Keys. & Blas. Wirbelth. Eur. p. lviii. (1840).
Calliope camtschatkensis (Gmel.), Strickl. Ann. & Mag. Nat. Hist. vi. p. 422 (1841).
Erithacus calliope (Pall.), Degl. Orn. Eur. i. p. 514 (1849).
Calliope kamtschacensis, Hartl. J. f. Orn. 1859, p. 50.

Figuræ notabiles.

Lath. Suppl. pl. 1; Gould, B. of Eur. pl. 114.

♂ *ad.* corpore suprâ fusco, pileo vix saturatiore, uropygio indistinctè olivaceo tincto: remigibus fuscis, extûs pallidè brunnescente fulvido marginatis: rectricibus dorso concoloribus: lineâ superciliari albâ, loris nigricantibus: vittâ elongatâ in gulâ lateribus albâ nigro-fusco marginatâ: mento et gulâ lætè sanguineo-rubris: gutture schistaceo-cinereo, pectore pallidiore et brunneo tincto: corpore reliquo subtûs albo, hypochondriis et subcaudalibus pallidè brunneo lavatis: rostro corneo, ad basin pallidiore: iride fuscâ: pedibus pallidè brunneis.

♀ *ad.* corpore suprâ, alis et caudâ ut in mare picturatis: mento et gulâ albis, striâ superciliari sordidè albidâ: gutture, pectore, hypochondriis et subcaudalibus pallidè brunneis: abdomine centrali albo.

Adult Male (Ural, 28th June). Upper parts generally wood-brown, rather darker on the head, and slightly inclining towards olive on the rump; quills margined on the outer webs with dull fulvous brown; tail similarly coloured to the rest of the upper parts; a clear white line passes from the base of the bill on to the forehead above and slightly behind the eye; lores and space in front and below the eye black; on each side of the upper throat an elongated pure white patch is carried from the base of the lower mandible, this patch being bordered with blackish brown, throat in front rich glossy scarlet, forming a large patch, extending down to the lower throat; this red patch is bordered with dark slate-grey, which gradually fades into grey with a brownish tinge on the breast, and then to white; rest of the underparts white, on the flanks, and to a very slight extent on the under tail-coverts, washed with brownish grey or light brown; bill dark horn, lighter at the base; iris dark brown; legs light brown. Total length about 6.25 inches, culmen 0.55, wing 3.0, tail 2.6, tarsus 1.1.

Adult Female (Formosa, March). Upper parts as in the male; but the red on the throat is wanting, as also the white patch on each side of the throat; superciliary line dull white; chin and upper throat

white; lower throat, breast, flanks, and under tail-coverts dull light brown; centre of the abdomen white.

Young Male. Resembles the female, but has the white on the throat tinged with red.

AN inhabitant of Asia, especially of the eastern portion of the continent, this richly coloured bird is only met with in the extreme eastern portion of Europe, or else as a rare straggler. Messrs. Degland and Gerbe state that it has on two occasions been obtained in France, the first occurrence being that of an adult male, recorded by M. Gerbe (Rev. Zool. 1854, p. 10) as having been taken in the Department of Var, in August 1829; it is now preserved in the Museum of Draguignan; and the second, also an adult male, was, Messrs. Jaubert and Barthélemy-Lapommeraye say, killed near Draguignan in April 1835, and is deposited in the Museum of Marseilles. With the exception of these two specimens, I find no record of the occurrence of the present species west of Russia—of which country it appears to be restricted to the eastern portion, on the confines of Asia. Temminck states that it has been once obtained near Moscow; but Mr. Sabanäeff, in the notes sent to me, in which he refers to this statement, remarks that he has never met with it there. In the Ural district, he adds, M. Martin obtained three or four examples in the Poleffskaya Dacha, on the western slope, but it is rare; on the eastern slope, however, close to the boundary of the Tobolsk Government, it would appear to be numerous. Mr. Sabanäeff has sent me a fully adult male, labelled by him as having been obtained on the Upper Ural.

In Asia it is found as far east as Japan, and during the winter it migrates as far south as Central India. Dr. Severtzoff does not record the occurrence of the present species in Turkestan, though he includes under the name of *Calliope baillonii* a Ruby-throat which appears to be identical with *C. pectoralis*, Gould; but in the collection of Mr. Howard Saunders there is a specimen from Turkestan which is decidedly referable to the present species, and not *C. pectoralis*. I am also indebted to Mr. Saunders for the loan of a specimen from the Caucasus, showing that it is also found there.

During the summer season the present species is common in Siberia. Von Middendorff states that it arrived at Udskoj-Ostrog late in May, and by the end of June the males had the testes strongly developed. Dr. Radde remarks that in South-eastern Siberia it arrives very early; for Herr Maximowicz obtained a male on the 6th April, 1860, on the Upper Ussuri; but in Mongolia it appears about a month later. In the autumn the birds passed the Tarei-nor on their southward passage on the 22nd August. Von Schrenck says that Mr. Maack obtained two specimens—one near the mouth of the Ussuri on the 26th July, and the other on the 19th September a little above the Bureja Mountains. Dr. Dybowski has met with it breeding commonly in Dauria; and, according to Pallas, it is found during the summer season in Kamtschatka. It visits India during the winter season. Dr. Jerdon writes (B. of I. ii. p. 150), "found chiefly in Northern and Central India. I never saw it south of the Nerbudda, except once, on board ship, a little south of Bombay, where one took refuge in the month of November. It is most common in Bengal and the eastern side of India, and is a cold-weather visitant." Mr. V. Ball says that he once met with it in the Salpura hills, and has frequently obtained it from the neighbourhood of Calcutta; and Mr. Blyth states (Ibis, 1867, p. 16) that it has even

been received from the Philippines. Mr. Swinhoe obtained it commonly in China, where it appears to be a cold-weather visitant. He obtained it at Tamsuy in April, and says that in that month it passes Amoy on its migration northward. He also writes (Ibis, 1861, p. 329), "This is a common bird in the neighbourhood of Peking, and, I think, is a permanent resident. I observed it as late as October skulking about amongst the long grass, like a Reed-Warbler, whence it was very difficult to drive it. Perched on a tree, it assumes many of the habits of the Redbreast, throwing the tail up and bobbing forward. It is a great favourite among the Chinese, who call it the Hung-po (Red-throat), and sometimes Chin-po (Golden-throat)." Père David also records it as numerous in North China at both seasons of passage; and Temminck and Schlegel state that it inhabits Japan.

Von Middendorff and Dr. Dybowski have both given tolerably full details respecting the habits of the present species. The former says (Sib. Reise, p. 174) that he found it in willow-thickets, and, owing to its shyness, he found extreme difficulty in obtaining a specimen of the adult male. He met with it during the breeding-season, and says that the nests were placed on the ground near the river-banks or on an island, usually at the foot of some willow bush. Dr. Dybowski gives a more detailed account, which I translate from his notes published by Mr. Taczanowski (J. f. O. 1872, p. 433), as follows:—"In Dauria this is a common bird, arriving late in May. Throughout June its soft, quiet, somewhat unvaried song is heard; and it is one of the pleasantest of our songsters. So soon as the sun has left the horizon this bird begins to sing,—first one or two commencing; and gradually more join in, until in the dusk of the evening all the males are in full song; and I have often heard from three to five singing close to our tent. They sing more or less, according to the weather; for during rain they seldom sing, being only heard now and again. During the daytime they frequent the thickets.

"The present species inhabits the wooded plains near rivers and streams, and is met with as far as the boundary of tree-growth, thus at a much greater altitude than *Larvivora cyane*. It nests on the ground in out-of-the-way places, either in heaps of boughs swept together by the floods, or else in bush thickets or dense grass, or under the shade of hillocks. The nest is only found by accident; we only found a few, although the bird is so numerous. The nest is domed and has an opening in the side. It is constructed of dried marsh-grass, and lined with fine bents. Although artistically built, the structure is weak, and it is difficult to take it away without destroying its original shape. Late in June the female deposits five oval-shaped eggs; some, however, are rather elongated, others shorter and stouter; and they have a slight gloss. The ground-colour is greenish blue; and the entire surface is sparingly marked with very pale brick-red (almost imperceptible) spots, which are rather more thickly scattered round the larger end. They measure from 18·8 by 15·3 millims. to 21·4 by 16 millims. The female sits very close, and may be taken on her eggs. When frightened off, she escapes through the dense thicket, and will not soon return to her nest. Whilst the female is sitting, the male sings all night through in the vicinity of the nest.

"In the autumn they remain until the middle of September; and stragglers are met with as late as the 5th October."

The specimens figured are an adult male from the Upper Ural, and a female from China, both of which are in my collection.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a, ♂ *ad.* Upper Ural, June 28th, 1872 (*Sabanäeff*). *b*, ♂. Jakutsk, Siberia (*Sabanäeff*). *c*, ♂. Sikkim (*Anderson*). *d*, ♂. Lake Baikal, May 29th, 1869 (*Parvex*). *e*, ♂ *ad.* April. *f*, ♂ *juv.* Amoy, China (*R. Swinhoe*). *g*, ♀ *ad.* Formosa, March (*Swinhoe*).

E Mus. Howard Saunders.

a, ♂. Turkestan, May 17th (*Dode*). *b*, ♂. Tiflis, Caucasus, May 1873 (*F. Smith*).

Genus COSSYPHA.

Cossypha, Guérin, Rev. Zool. 1843, p. 162.

Saxicola apud Pelzeln, Sitz. Ak. Wissensch. Wien, xlviii. p. 150 (1863).

Irania apud DeFilippi, Viagg. in Pers. p. 347 (1865).

Bessonornis apud Tristram, Ibis, 1867, p. 89.

Bessonornis apud Gray, Gen. of B. i. p. 265 (1869).

THIS genus, in which I have placed the single species found within our limits, was founded by Vigors in 1825 for a small group of African birds, the type being *Cossypha reclamator* (Vieill.). With the exception of *C. gutturalis*, all the species included in *Cossypha* inhabit the Ethiopian Region; and that species differs somewhat from the type, and might almost be separated, in which case it would stand as *Irania*, DeFilippi. It appears to be nearly allied to *Daulias*, and is not far distant from *Saxicola*. The birds belonging to the genus *Cossypha* inhabit the borders of woods, orchards, and groves in well-watered or cultivated districts. They are good songsters, and feed on insects, which they search for both amongst the foliage and on the ground. Their flight is somewhat slow; and when on the wing they look larger than they really are. Full particulars respecting the habits and nidification of the single species found within our limits are given in the article on that bird; and I give the generic characters of the species *Cossypha gutturalis* as follows:—Beak moderately long, somewhat broad at the base, the culmen gradually curved; nostrils basal, oval, placed in a small membranous groove; gape slightly bristled; wings moderately long, rounded, the first quill short, the second shorter than the fifth, the third and fourth longest; tail long, broad, and rounded; tarsi rather long, covered in front with one long plate, or several indistinct plates, and four inferior scutellæ; toes moderate and rather weak, claws small, curved.



WHITE-THROATED ROBIN-CHAT.

COSSYPHA ALBIGULARIS

115



WHITE THROATED ROBIN CHAT.

COSSYPHA GUTTURALIS

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COSSYPHA GUTTURALIS.

(WHITE-THROATED ROBIN-CHAT.)

Cossypha gutturalis, Guérin, Rev. Zool. 1843, p. 162.*Saxicola albigularis*, Pelz. Sitz. Akad. Wissensch. Wien, xlviii. p. 150 (1863).*Irania finoti*, De Filippi, Viagg. in Persia, p. 347 (1865).*Bessonornis albigularis*, Tristram, Ibis, 1867, p. 89.*Bessonornis gutturalis*, Gray, Gen. of B. i. p. 265 (1869).*Irania filoti*, De Filippi, Sclater (laps. cal.), Ibis, 1864, p. 402.*Figuræ notabiles.*

Ferret et Galinier, Voy. en Abyss. Atlas, Zool. pl. v. ; Tristram, Ibis, 1867, pl. 1.

♂ *ad.* suprâ saturatè cinereus, tectricibus alarum dorso concoloribus, exterioribus nigricantibus : remigibus nigricanti-brunneis, pallidè cinereo marginatis, secundariis latiùs limbatis, intimis angustè albido apicatis : caudâ nigrâ : lineâ angustâ frontali albâ posticè productâ supercilium distinctum formante : loris cum regione infraoculari, genis, mento et gutture utrinque nigris, regione paroticâ cinereo lavatâ : gutture medio purè albo, fasciam longitudinalem conspicuam formante : corpore reliquo subtùs lætè aurantiaco, abdomine imo albicante et subcaudalibus latè albo terminatis : tibiis nigricantibus : subalaribus aurantiacis : rostro et pedibus nigris : iride brunneâ.

♀ *a mari diversa* : suprâ cinerascenti-fusca, facie et collo lateralibus dorso concoloribus : loris et regione oculari albicantibus, regione paroticâ albido striolatâ : alâ caudâque ut in mari coloratis : gutture albo : torque indistincto jugulari sordidè cinereo : corpore reliquo subtùs albido, pectore superiore et hypochondriis aurantiaco lavatis : subalaribus lætè aurantiacis.

Pull. suprâ pallidè stramineus, plumis angustè brunneo marginatis : tectricibus alarum dorso concoloribus, ad apicem fulvo maculatis : remigibus cinerascenti-brunneis, primariis angustè fulvescente, secundariis latiùs ochraceo limbatis : caudâ nigrâ, rectricibus fulvescente terminatis : gutture et pectore superiore pallidissimè stamineis, angustè brunneo marginatis : corpore reliquo subtùs albo, hypochondriis paullò brunneo notatis : tibiis brunnescentibus.

Adult Male. Upper parts dark lead-grey ; quills greyish black, indistinctly edged on the outer web with lead-grey ; tail black ; a white superciliary line passing from the base of the bill over and behind the eye ; lores, scapulars, and sides of throat rich glossy black ; a narrow line at the chin, widening as it passes down the throat until on the fore part of the breast it is fully 0·35 inch wide, pure white ; breast, and underparts generally, yellowish rufous, paler towards the lower portion of the abdomen, the centre of which is white marked with pale rufous ; thighs lead-grey, tinged with rufous ; under wing-coverts rufous ; under tail-coverts white, pale rufous at the base ; bill and legs black ; iris brown. Total length 7 inches, culmen 0·65, wing 3·75, tail 3·0, tarsus 1·05.

Adult Female. Upper parts brownish grey ; wings also same colour ; tail black ; from the nostril to the eye an indistinct light brown mark ; sides of head, neck, and fore part of breast brownish grey ; on the throat a dull white spot corresponding to the pure white on the throat of the male ; lower part of the

breast, abdomen, and under tail-coverts dull white, marked on the flanks and breast with rufous; thighs slaty brown; under wing-coverts rufous; soft parts same as in the male, but the legs and beak appear paler.

Nestling. Head, back, neck, and breast greyish brown, closely marked with small, light sandy brown spots and streaks; wings dark greyish brown, the secondaries being tipped with rufous, the inner ones having a large rufous spot at the tip; the short stumpy tail blackish brown, tipped with dull slate; lower part of breast and abdomen dull white.

It is only of late years that any thing has been known respecting the habits of this species; for, until Dr. Krüper found it in Asia Minor, it was a comparatively unknown bird. It was first described from North-east Africa by Guérin, after specimens brought home by MM. Ferret et Galinier from Abyssinia, under the name of *Cossypha gutturalis*; but it was afterwards supposed that this bird differed from the one found in Asia Minor. We have, however, examined two specimens from Abyssinia, collected by Mr. W. Jesse, which are precisely identical with examples in our collection obtained near Smyrna by Dr. Krüper. Mr. Jesse obtained both these birds in the plains on the coast, and did not observe this species elsewhere. Dr. Otto Finsch, in referring to these two examples (Trans. Zool. Soc. vii. p. 243), states that the two sexes are alike, which is certainly not the case. Mr. Jesse has, in error, marked a fine adult male he procured as "female;" and hence the mistake.

The range of this species extends through Asia Minor down into North-eastern Africa and eastward into Persia, whence a female was redescribed by De Filippi under the name of *Irania finoti*. Mr. W. T. Blanford has kindly lent us two specimens, a male and a female, collected by him in Persia, respecting which he writes us as follows:—"The two specimens are from the Elburz mountains, north of Tehran, and were found amongst bushes in rocky valleys. They appeared to me to have rather skulking habits, hiding themselves in bushes. Both in habits and distribution of coloration in the plumage of both sexes this bird approaches *Ianthia*, I think, and, in a smaller degree, *Calliope*." We have carefully compared Mr. Blanford's birds with those we have figured; and they agree almost to a feather. It appears to winter in Eastern Abyssinia, where, according to Von Heuglin, it is rare; and it arrives at its breeding-haunts in Asia Minor late in April.

Respecting its occurrence in Asia Minor, we translate the following notes published in 'Cabanis's Journal' by our friend Dr. Th. Krüper:—"On the 29th of April I made an excursion from Burnova along the stream up the mountain. On a precipice covered with bushes I observed a bird which uttered the alarm-note of the Nightingale, and, like that bird, ran off along the ground with erected tail. I fired a snap shot at it, but without success, and it got off, nor could I again see it. As I mounted the hill and was near to the place to which I was going, a high cliff, I heard between the notes of *Sylvia rüppelli*, *S. passerina*, and *S. orphea* the clear loud song of a bird, which I followed, and at last caught a sight of the songster as it flew singing from one branch to another. As it flew it seemed almost as large as a Missel-Thrush, and had the underparts red, the upper surface of the body being slate-grey. I saw clearly that it was no known European species; but what it could be I could not imagine, and I was determined to procure it all hazards so as to make it out. So shy and cautious was it that, though I followed

it for hours, I could not get near it, though I several times saw it clearly enough. At last I fired at it, though at a great distance, but did not procure it. From its not quitting the locality, I was sure that it remained there during the summer to breed; and I also saw here the bird I observed at the foot of the mountain, which I thought to be the female of the lovely songster. On the 10th of May I was again in the same locality, and saw the songster several times; but not so often as before, as it sang but little; and on my return I heard the clear note of a bird, but as it was so far off I was not sure if it was a Blackbird. On the 13th of May Mr. Schrader accompanied me, in order that we might together try and secure this mysterious bird. We went past the so-called Homer's Grotto to a spring which watered a small Turkish garden where three days previously I thought I heard the note of the long-sought-for bird. We had scarcely reached the bushes when we heard the song of the bird, and soon caught sight of it. Moving carefully on, we ascertained that two males were singing in competition. We followed them for hours, and each of us had fired a shot without success, when at last I crept up behind a bush close enough to bring one down, and we could at last examine the bird closely. . . . We proceeded onward delighted at our success; and under the shade of an oak Mr. Schrader skinned this bird, a female *Hirundo rufula*, and a male *Sylvia galactodes*, as they would have spoiled from the great heat had we taken them back to Burnova. I now started alone after the other male bird, but heard its note but seldom, as the pairing-time was over, and it doubtless had built its nest. However, I met with no success, and only found a nest of *S. passerina* containing five eggs. In the afternoon we returned by the same route, past the spring: here Mr. Schrader shot a second male, which was following a dull-coloured female; and a third male fell to a shot from me a few minutes later. Although I visited the same place some weeks afterwards, I saw neither old nor young birds; but late in August Mr. Schrader saw a male, probably about migrating, at Burnova. Of these three males we had procured, I sent one to the English Consul, Merlin, at Athens, and two to my friend Seidensacher, one of which had to be sent to the Vienna Museum for examination and to be named. Mr. von Pelzeln was kind enough to examine it; and on the 8th of October, 1863, he described it as *Saxicola albigularis*, and stated that in form it agreed with *Saxicola melanura*, Rüpp., but that the bill had no notch at the tip, and therefore resembled that of the genus *Thamnobia*. As, however, the tooth often varies in different individuals of the same species of *Saxicola*, and in an immature bird of *Saxicola melanura* in the Berlin Museum it is entirely wanting, and the wing and tarsus are similar to those of *Saxicola*, Mr. von Pelzeln considers that the species here in question should be referred to *Saxicola*. An ornithologist who has never seen the bird in a state of nature may be right, when he examines a skin of it, in describing it as a Chat; but I, on the other hand, should call it a Warbler, as I have done, and leave it to the cabinet-naturalists to decide where it belongs. In its habits it comes nearest to *Sylvia (Aedon) galactodes*, but belongs to another group, as the difference between the sexes is so great. Nor can I say if *Thamnobia* is its proper generic term, as I have no books at hand for reference. Its sweet note is certainly different from a Chat's call; and its mode of nidification is the same as that of a White-throat. . . ."

Canon Tristram met with it in Palestine, and writes (*Ibis*, 1867, p. 89) respecting it as follows:—"A link also between *Ruticilla* and *Saxicola* is to be found in *Bessornis albigularis* (pl. 1). This bird was first described by Herr von Pelzeln, at Vienna, in October 1863, under

the name of *Saxicola albigularis*, from Smyrna specimens of Dr. Krüper's. My reasons for changing the genus I shall give. De Filippi (Viagg. in Persia, p. 347) has set forth a new genus (*Irania*), and described under it a bird as *Irania finoti*, which, so far as I can make out, is nothing else than the female of *B. albigularis*. It is impossible, I think, for any one, on observing this beautiful form, whether in life or as a cabinet-specimen, not to admit that, though Saxicoline in its affinities, it is a very aberrant member of the group. It corresponds in all generic features with Sir A. Smith's genus *Bessonornis* (recte *Bessornis*), which was formed for the reception of more than a dozen African species, differing from *Saxicola* in the length of tarsus, elongated tail, and having the rufous coloration of *Ruticilla*. To this type our present species undoubtedly belongs, in proportions, anatomy, coloration, and habits; and De Filippi's genus *Irania* appears to me a mere repetition of the older *Bessornis*.

"On the afternoon of June 4, 1864, I was rambling alone among the vineyards and pear-orchards which stretch about three miles above Rasheiya to the very verge of the naked sides of Hermon; and the icy water from the melting snows was trickling even then, in refreshing rivulets, through the channels which intersect the primitive enclosures. It had already been a day *cretâ notanda* in my collecting-journal. I had just taken my first nest of *Hypolais upcheri*, shot the birds, and ascertained I had a new species in my bag. I had secured four or five specimens of a Serin unknown, with a nest of hard-set eggs; and this, too, proved to be new, my *Serinus aurifrons*. Two new species on the highway of ordinary travel were pretty well for a day's work; and I sat down, and was employed in blowing the eggs of Upcher's Warbler, when from a pear-tree overhead burst forth a song equal to that of the Thrush, but shorter; it was new to me; but I could not see the musician. He began again, and I caught sight of a jerking red tail in a pear-tree at a little distance. I took him for a *Petrocincla saxatilis*, as he perched with his back to me, and the sun glanced upon him. Soon the eggs were hurried into my case, and I was up in pursuit. Off he went out of the vineyards to the bare moraine beyond, and sat, Chat-like, on a boulder. I kept him in sight as he popped from rock to rock, and at length, as he was returning towards his first perch among the fruit-trees, I had a fair shot at him, and he fell just outside the crumbling wall, not a feather lost or soiled. 'African again!' said I to myself, as I fondly examined my prize. I soon heard another male of the same, but had only a distant glimpse of him, and it was too late in the day to remain longer in pursuit. The females were, no doubt, sitting not far off; but I never saw them; and a more hopeless labyrinth in which to search for the nests of ground-builders like the Chats cannot be conceived. The very vineyards are merely long rows of parallel ridges of loose stones, six feet wide and four feet high, raised at intervals of twelve paces, and on which the vines are trailed. One might have to remove a whole ton weight of stones on the chance of finding a nest, even when the bird had been exactly marked in. The few nests of Rock-Chats that are in my cabinet I hold to be among my hardest-earned treasures. No Chat or Redstart I ever heard has so clear or bell-like a note as *B. albigularis*; and if it were more prolonged, it might rival the Bulbul's. My female specimen was procured a week or two later, among oak-coppice on the eastern shoulder of Lebanon, where she was incubating. Again we heard her mate among the thick foliage of the evergreen oaks, but did not obtain him. The eggs are very pale blue, thickly studded with brown spots, and larger than those of the Wheatear."

With regard to its nidification in Asia Minor, Dr. Th. Krüper writes that "this year (1867) I observed the bird again in two other localities—one nearer to Burnova, and the other further distant. On the 7th of May I began hunting after them, and shot the first, a male, on a thorn-bush; it was only winged, and tried to hide amongst the dry herbage; but I caught and killed it. I killed a second male near the rocks, and shot, but lost, a third one. Hunting about amongst the bushes, I observed on a dwarf oak-bush, about four feet from the ground, a tolerably large nest, from which a bird slipped quietly off; and I could not see what it was, but thought it might be a Cirl Bunting (*Emberiza cirrus*). Great, however, was my delight when I found in the nest five utterly unknown eggs, which, when fresh, were of a lovely green colour, reminding me of those of the North-American Hermit Thrush (*Turdus minor*). As I knew of no other bird breeding there whose nest and eggs I was not familiar with, I immediately thought of the new White-throated Warbler. I let the eggs remain in the nest, and returned again in a quarter of an hour, but did not find the bird on her nest; but returning again in about an hour, I saw the bird sitting, and almost caught her on her nest; she slipped off, through a thick bush, and flew a short distance, settled on a stone and jerked her tail. I fired, and she fell; and now that I was certain that the nest belonged to the new bird, I took the nest and eggs. The nest resembled, in size, materials, and position, that of *Sylvia galactodes*, being composed of dry twigs and strips of bark, the upper part of fine grasses mixed with plant-cotton and down, with woollen threads and rags interwoven. I sent two of the eggs to Mr. Seidensacher, to be described and figured. They are oval, tapering towards one end, and resemble in size those of *S. galactodes*; the ground-colour is now faded, but is still unlike that of any European bird, unless it be some varieties of *Saxicola rubicola*; and the egg is covered all over with minute reddish-brown spots, and between these are lilac shell-markings: in one of the three eggs I have before me the spots are larger and more richly coloured." Dr. Krüper is of opinion that this bird may range from Asia Minor into Europe proper, and that further investigation will prove this to be the case. It arrives in the neighbourhood of Smyrna soon after the middle of April; for Krüper found it at its breeding-place on the 29th, and took five eggs on the 7th of May. He states that in its habits it much resembles *Sylvia galactodes*, but is much livelier, and inhabits the mountains instead of the plains.

We have not had an opportunity of examining the eggs of this rare bird; but our friend Dr. E. Rey writes to us that he possesses one, out of a sitting of five eggs taken on the 7th of May, which he describes as follows:—"The ground-colour is light greenish-blue; and the markings consist of small, yellowish, rust-coloured spots, irregular in shape, scattered all over the egg, but more thickly at the larger end; the grain of the shell is fine, but it is not glossy. It measures 22·5 by 16·0 millimetres. My friend Dr. Krüper cannot have had an egg of *Turdus minor* at hand when he compared the eggs in this sitting (Cab. Journal, 1869, p. 47) as resembling those of that bird, and must have made the comparison from memory; the eggs of *Turdus minor* are much higher-coloured, and cannot well be compared to those of *Cossypha gutturalis*."

The specimens described and figured are from Dresser's collection, and were obtained by Dr. Th. Krüper near Smyrna.

Since writing the above we have received seven more examples, the remainder of the series collected by Mr. Blanford in Persia, for examination, and find amongst them two immature

males, which we have deemed it necessary to figure on an extra Plate, and of which we further give the following description:—

Young Male. Upper parts as in the adult female, but somewhat greyer on the back; sides of the head and throat below the eye blackish grey; a narrow stripe from the chin to the lower part of the throat dull white, washed with ochre at the lower part, and bordered with blackish; breast greyish brown, some of the feathers tipped with dull yellowish-buff; rest of the underparts as in the female.

The second specimen, a much older bird, resembles the adult male we have figured, but has the upper parts almost as dull as in the female; the black on the sides of the head and throat does not extend so far down; the white on the throat is duller, on the lower part washed with dull sandy-yellow; and the entire underparts are light sandy-yellow, instead of dark orange-red as in the adult male.

In the preparation of the above article we have examined the following specimens:—

E Mus. H. E. Dresser.

a, ♀, *b*, ♀. Near Smyrna, May 27th, 1871. *c*, pullus. Smyrna, June 10th, 1871 (*Krüper*).

E Mus. Ind. Calc.

a, *b*, ♂, *c*, ♀. Karij valley, Elburz mountains, North Persia, August 1872. *d*, *e*, *f*, *g*, ♂. Shiraz, Persia, June to September 1872. *h*, ♂ juv. East of Shiraz, June 1st. *i*, ♂ juv. Shiraz, August 1872 (*W. T. Blanford*).

E Mus. H. B. Tristram.

a, ♂. Foot of Mount Hermon, June 4th, 1864. *b*, ♀. Near the top of Lebanon, June 16th, 1864 (*H. B. T.*).

E Mus. H. Seebohm.

a, ♂. Smyrna, April 30th, 1872 (*Dr. Krüper*).

E Mus. Lord Walden.

a, ♂. Koomayli, Abyssinia, April 3rd, 1868. *b*, ♀. Mai Wallit, Abyssinia, August 18th, 1868 (*W. Jesse*).

Genus NEMURA.

Motacilla apud Pallas, Reise Russ. Reichs, ii. App. p. 709 (1773).

Nemura, Hodgson, P. Z. S. 1845, p. 27.

Lusciola apud Temminck & Schlegel, Fauna Japonica, Aves, p. 54 (1850).

Ianthea apud Swinhoe, Ibis, 1861, p. 329.

IN many respects the Bluetails resemble the Robins as well as the Redstarts, being perhaps, to judge from their habits, nearer to the latter, though their eggs assimilate more closely to those of *Erithacus*. According to some authors, they resemble the Flycatchers very closely in their general habits. They frequent groves, and are more frequently seen on the tops of the lofty trees than in the bushes. Their song, though not of a very high quality, is pleasing. They feed chiefly on insects, and are said to search for their food both on the tops of the trees and on the ground. They build carelessly constructed nests in the clefts of rocks, and deposit four dull bluish white eggs spotted with pale reddish brown.

Only one species is found in the Western Palæarctic Region; and it ranges right across the Eastern Palæarctic and southward into the Indian Region.

This species, *Nemura cyanura*, which is the type of the genus, has the beak tolerably stout, slightly broad at the base, the notch at the tip tolerably distinct; nostrils basal, oval; the bristles on the gape distinct and rather long; wings moderately long, first quill over one third of an inch longer than the coverts, second shorter than the seventh, fourth the longest; legs long and rather slender, tarsus covered with a long anterior plate and four inferior scutellæ; middle toe with claw considerably shorter than the tarsus; tail rather long, slightly forked.



REDFLANKED BLUETAIL.
NEMURA CYANURA

NEMURA CYANURA.

(RED-FLANKED BLUETAIL.)

Motacilla cyanurus, Pall. Reis. Russ. Reichs, ii. App. p. 709 (1773).*Motacilla cyanura*, Pall. Zoogr. Rosso-As. i. p. 490 (1811).*Nemura rufilatus*, Hodgs. Proc. Zool. Soc. 1845, p. 27.*Nemura cyanura* (Pall.), Hodgs. Proc. Zool. Soc. 1845, p. 27.*Lusciola cyanura* (Pall.), Temm. & Schl. Fauna Japonica, p. 54, pl. 21 (1850).*Sylvia* (*Nemura*) *cyanura* (Pall.), Middend. Sib. Reise, ii. p. 177 (1851).*Nemura rufilata* (Hodgs.), Swinhoe, Ibis, 1860, p. 54.*Ianthia rufilata* (Hodgs.), Swinhoe, Ibis, 1861, p. 329.*Ianthia cyanura* (Pall.), Swinhoe, Ibis, 1863, p. 298.*Figuræ notabiles.*

Pallas, Zoogr. Rosso-As. i. pl. xxx.; Temm. & Schlegel, Fauna Japonica, pl. 21; Middendorff. Sib. Reise, pl. xv. fig. 5; David & Oustalet, Ois. de la Chine, pl. 28.

♂ *ad.* suprà saturatè cæruleus, fronte, superciliis, tectricibus alarum minoribus et uropygio lætè ultramarinis, caudâ nigricanti-cæruleâ: remigibus nigricantibus, extûs saturatè cæruleo marginatis: capitis et colli lateribus nigro-cæruleis: mento, gulâ et gutture centraliter, cum corpore imo subtûs, albis: hypochondriis aurantiaco-ferrugineis: rostro et pedibus nigricantibus: iride fuscâ.

♀ *ad.* suprà olivaceo-fusca: tectricibus alarum minoribus cæruleo tinctis: uropygio et caudâ cæruleis: fronte et regione ante oculos cervinis: gulâ, gutture et corpore subtûs albis cervino tinctis, pectore cinereo-fusco tincto, hypochondriis aurantiaco-ferrugineis.

Adult Male (Sikkim, December 1874). Upper parts deep Prussian blue tinged with bright ultramarine on the rump and shoulders; forehead and a broad streak over the eye rich ultramarine-blue, the latter with concealed traces of white; quills blackish, externally margined with Prussian blue; tail deep Prussian blue; sides of the head and neck deep Prussian blue, the lores blackish; chin, throat, and underparts generally white, except the flanks, which are rich orange-rufous; bill and legs black; iris dark brown. Total length about 5·5 inches, culmen 0·5, wing 3·4, tail 2·8, tarsus 0·88.

Younger Male (Tingchow, China, December). Resembles the above, but has the upper parts paler and rather duller, the superciliary stripe is white intermixed with blue, the white on the throat covers a larger area, and the underparts are not so pure white.

Adult Female (Lake Baikal). Upper parts olivaceous wood-brown, tinged with blue on the shoulders; rump dull ultramarine-blue; tail blackish grey broadly margined with blue; quills dark brown, externally margined with warm olivaceous brown; sides of the head and neck brown slightly marked with warm buff; forehead and a streak before and slightly above the eye buff; throat buffy white; breast white tinged with brownish grey; rest of the underparts dull white; flanks rich orange-rufous.

Nestling. I have not been able to examine a specimen in nestling-plumage; but Von Middendorff figures it in this plumage as spotted, not very unlike the young of *Cyanecula suecica*, but easily recognizable by its blue tail.

THIS richly coloured Asiatic bird is found throughout Asia as far east as China and Japan, ranging southward into India and westward to the Ural, where it just penetrates into the Western Palæarctic Region. Mr. Seebohm informs me that he has seen specimens from the Ural range; and Mr. Sabanäeff writes (Pozvonotsch. sred. Ural, p. 93):—"This species seems to belong almost exclusively to the avifauna of the district of Verhotiersk, as it appears very doubtful if it really breeds in the Kaslinsky Ural, where it probably occurs only on passage; and, judging from the localities it visits in the Perm Ural, it is probably more numerous on the south-western slopes of the Ural range. Its breeding-range commences in the vicinity of Tagil, where I often met with it in July 1868; and it is most numerous in the old fir-forests in the Pavdinskaya Dacha, where it is the commonest of any of the Warblers.

"This bird is the representative species of the boreal fir-forests; and it and the Tree-Pipit are the principal inhabitants of these localities, occurring even in the wildest portions, far away from any pond or river, where their song breaks the otherwise almost total silence of these dense woods. *Nemura cyanura*, however, occurs also in young fir-plantations, but only near where there are lofty trees. In August, after the young are hatched, they frequent, almost exclusively, the bushes skirting the small streams. In the Ural proper they are scarcely more numerous, as they are only found at the foot of the mountains and never at any great altitude, only frequenting conifer-regions. I am convinced that this species occurs also in the Solikamsk district, and must therefore be included in the avifauna of North-east Russia in Europe. In the Bogosloffskaya Dacha, where the conifer-growth is scant, this bird is rarer; but I met with it very generally round about Bogosloffsk, near the Caspian, and especially near the Vagran where it joins the Sosva."

It does not appear to have been met with in Turkestan, nor do I find it recorded from Persia or Baluchistan; but Dr. Jerdon says (B. of India, ii. p. 147), "it is found throughout the Himalayas from the north-west to Sikkim. It is only a winter resident in Sikkim, however, and, I suspect, throughout the hills also. It is said to be common in China, Central and Northern Asia, and in Japan. It is very numerous about Darjeeling in the cold weather, from 4000 feet upwards. It keeps to the forests, perches low on small trees and brushwood, and descends to the ground to feed on insects of various kinds. It is not unfrequently seen feeding on the bridle-paths and roads." In Siberia it is found from the extreme west right across the continent of Asia to Japan. Von Middendorff says that he saw it at Udskoj-Ostrog on the 19th April (O. S.), and that it breeds there commonly. On the 2nd July the young were fledged; and on the 13th of September the last were seen passing southward. He also shot specimens on the western slope of the Stanowoi Mountains early in May. Von Schrenck writes (Vög. des Amurl. p. 362) that "this bird, which ranges from the Jennesei to the coasts of the Sea of Ochotsk and the Japanese islands, and from Nepal to the Lower Tunguska, is common in the Amur country, and there, as well as in Dauria, is one of the earliest of the Warblers to arrive and latest to leave. In the spring of 1855 it was observed near the Mariinskischen Post

on the 10th (22nd), and near the Nikolaieffsk Post on the 19th April (1st May), at which time there was still much snow on the ground; and these birds were seen in pairs and small flocks near houses, where I still saw them on the 3rd (15th) May. In August 1854 I frequently met with them in the willow and alder thickets on the Amoor, near the Nikolaieffsk Post, and on the 24th of that month shot a young bird in nestling dress. I observed the last near there on the 15th (27th) September, a few days later than Von Middendorff last saw them at Udskoj-Ostrog; and at the same time, the 15th (27th) September, Mr. Maack shot this bird on the Southern Amoor, below the Bureja Mountains." Dr. G. Radde also states (Reis. im Süd. v. Ost-Sib. ii. p. 259), "this Warbler arrived earlier in the Bureja Mountains in the spring than at the mouth of the Amoor; for the first was shot there on the 30th March (O. S.) It does not occur on passage so numerously by far on the Central Amoor as in Dauria; for I only observed stragglers there (on the Amoor), whereas it was very common in Transbaikalia in the middle of April. The main body appears to pass on the 10th April; for it was noted as the day of arrival by me at Tarei-nor, and by Von Schrenck at the mouth of the Amoor, and I observed flocks on this day in the Bureja Mountains. This Warbler remains but a short time to rest; and though I found some on the 13th April, which had arrived the night before, so tired that I caught them with the hand, yet most proceeded onwards the next night during a strong breeze from the north-west; for I did not observe one on the 14th." He further remarks that most of the males shot on passage had the testes much swollen, and dark blue-grey or reddish grey in colour, also that this bird and *Ruticilla aurorea* remain the latest of any of the Warblers in South-east Siberia, and he shot two near Irkutsk on the 22nd September (O. S.) 1855. In Mongolia he found that the autumnal passage took place at the same time as Von Middendorff and Von Schrenck observed it on the coast-regions of East Siberia. Colonel Przevalsky, who obtained it in Mongolia, says (Rowl. Orn. Misc. pt. vi. p. 179) that he first met with it in the Alashan about the end of September and beginning of October 1871. It breeds commonly in the wooded parts of Kansu, where it arrives in April, after which time the males sing beautifully. About Lake Hanka the first spring migrants appeared early in April; and it is common there until May; but he never saw it in summer, though Maack says that he found it breeding sparingly in the Ussuri country. Père David says that it is very common in Mongolia and China, where it affects forests and wooded localities, but sometimes visits the towns, and is not rare in Pekin on passage. It usually perches on the bushes and low branches of trees, and frequently goes on the ground in quest of insects. It shows no more fear of man than does the common European Redbreast, which species it resembles in its habits, as well as in its call-note, which is short, and consists of two deep syllables, *toc-toc*. Mr. Swinhoe says that he only met with it in summer in North China, and on the island of Formosa he only once observed it in March. How far south it ranges in Eastern Asia I am unable to say; but it probably winters in South China. In Japan this Bluetail does not appear to be uncommon; but I find but little on record respecting its occurrence or range there. Mr. Whitely says (Ibis, 1867, p. 197) that he obtained a specimen on the 6th November in the scrub near Hakodadi Head; and it was obtained by Von Siebold, and is figured in the 'Fauna Japonica.'

But little appears to be on record respecting the breeding-habits of this bird beyond what is given by Mr. A. O. Hume in his work on the nests and eggs of Indian birds, which I transcribe

as follows:—"I have never succeeded in finding a nest of the White-breasted Blue Woodchat. In the hills north of Simla they breed, I believe, very high up. Writing of the Sutlej valley, my friend Dr. Stoliczka says, 'this species does not occur in summer to the west of Nachar, and not below 8000 feet. It breeds near Chini, and even here almost only near the limit of trees, at about 12,000 feet. It is often seen about Korzog, in Rupshu, at an elevation of between 15,000 and 16,000 feet.'

"But further west in Cashmere they breed as low as 6000 feet; and I have eggs taken there during the latter half of May and the first half of June. They breed there, it appears, in holes, making a nest of moss and grass, lined with soft white grass.

"From Cashmere Mr. Brooks noted that 'this bird, like *Siphia leucomelanura*, breeds in the immature or female dress. I shot several pairs which were nesting, and saw others. Only one pair had the male mature and differing from the female. It nests in holes in bank-sides, under tree-roots, or fallen tree-trunks. The eggs, four in number, are bluish white, very faintly marked towards the larger end with the palest reddish brown. Those markings can only be seen upon a close inspection. Length 0·74 by 0·56.'

"He obtained, if I remember right, only a single nest; and this was at Goolmergh, and on the 2nd of June. Each of the three nests of which I have notes contained four eggs.

"Mr. Brooks mentioned *in epist.*, 'the shape of the egg is similar to that of other Robins, but diminishes rather more rapidly from the centre of the egg towards each end. The texture is smooth with a slight gloss, ground-colour pale greenish white, with some indistinct faint mottlings of very pale red at the larger end with a tendency to form a zone.'

"The eggs of this species are broad ovals, much compressed, and pointed towards the small end, and at times somewhat pointed even towards the large end. They are white with a delicate green tinge, and towards the large end exhibit a faint zone of the most minute reddish-brown specks conceivable. The shell is very smooth and compact, has always a certain amount of gloss, which in some cases is very bright and decided. In length they vary from 0·69 to 0·74, and in breadth from 0·54 to 0·58; but the average of twelve is 0·71 by 0·56."

Dr. Dybowski, in his notes on the ornithology of Dauria, communicated to Mr. Taczanowski (J. f. O. 1872, p. 364), writes as follows:—"On the spring passage this bird is very common, arriving late in April, soon after which they pair. It frequents steep rocky mountain-slopes which are clad with a close dark forest-growth, and which always have a damp soil, which is stony or rocky, and covered with moss, ferns, and saxifrage plants. This bird places its nest on the ground, in a cleft or cranny amongst the stones on some rocky point. A small aperture between moss leads to the nest, which is carelessly built of green moss, and well lined with roe-hair. The nest is very difficult to take out, and also to keep uninjured. Should an intruder approach whilst the female is sitting, the male at once comes and tries to entice him away, in which it is usually successful. But should no notice be taken of it (for the female sits very close), and should the intruder not leave the place, the male bird will leave and not return. When the young are hatched the nest is easier to find; but even then the parent birds are exceedingly wary, and one must hide long and patiently, bearing as best one can the bites of the mosquitoes, before one can see where the old birds take the food to the young ones. Late in June many of the young were fully fledged, and we found others fully feathered but still in the

nest, five or six being the usual number. In the autumn the migration lasts till the 10th of October. In the Darasun district this bird is also common." A clutch of unidentified eggs sent by Dr. Dybowski, Mr. Taczanowski surmises are those of this species. He compares them to those of the Robin; they are marked, he says, with reddish spots on a dull white ground, the spots being more profuse at the larger end; and, judging from Mr. Hume's notes as above given, Mr. Taczanowski is, in all probability, correct in his surmise.

Referring to the habits of this bird, Mr. Sabanäeff writes (*l. c.*) as follows:—"In habits the Bluetail resembles the Flycatchers. It is constantly in motion in quest of insects, and resorts to the tops of the trees, especially when they are lofty. It is consequently very difficult to shoot, more so, if possible, than *Phylloscopus borealis*. Its song, which is not very often heard, is peculiar, and resembles the syllables *tul, tul, tul, tul, tul, tul, dee*. It evidently breeds late; for on the 26th June, 1872, I found at Sosva a nest containing a single egg, which in appearance resembled the eggs of the common Flycatcher (*Muscicapa grisola*), and on the 6th August, 1868, I met with some just-fledged young birds at the foot of the Pavdinsk rocks, whereas near the Pavdinsk works the young birds could fly about the middle of June."

By some authors the present species has been divided into two forms—*Nemura cyanura* and *Nemura rufilata*, Hodgs.; but a perusal of Hodgson's description will at once show that his *Nemura rufilata* is the very old male, whereas his *Nemura cyanura* is a younger bird in the plumage resembling that of the female. Blyth treats of *Nemura rufilata* as specifically distinct, stating that it lacks the white eye-streak and has this streak brownish; but, judging from specimens I have examined, I cannot believe that he is justified in making two species. I find the eye-streak very variable in colour, it being much duller and browner in young birds; and in one very old male, which I have figured and described, the eye-streak is rich ultramarine blue, with only a faint trace of white visible when the feathers are moved.

The specimens figured are a very old male from Sikkim, and an adult female from Lake Baikal.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a, ♂ *ad.* Sikkim, December 1874 (*Mandelli*). *b*, ♀ *ad.* Lake Baikal (*Dybowski*). *c*, ♀. Cashmere, May 20th, 1876 (*Captain J. Biddulph*). *d*, ♂, *e, f*, ♀. Tingchow, China, December 1867 (*R. Swinhoe*).

Genus DAULIAS.

- Ficedula* apud Brisson, Orn. ii. p. 397 (1760).
Motacilla apud Linnæus, Syst. Nat. i. p. 328 (1766).
Sylvia apud Scopoli, Ann. I. Hist. Nat. p. 154 (1769).
Curruca apud Koch, Baier. Zool. i. p. 154 (1816).
Luscinia apud C. L. Brehm, Isis, 1828, p. 1280.
Daulias, Boie, Isis, 1831, p. 542.
Philomela apud Selby, Brit. Orn. i. p. 206 (1833).
Lusciola apud Keyserling & Blasius, Wirbelth. Eur. i. p. 58 (1840).
Erythacus apud Degland, Orn. Eur. i. p. 499 (1849).

THE Nightingales are by far the best songsters amongst all our European birds. They have much in common with both the Thrushes and Warblers, differing from the latter chiefly in being more slender in build and having the tarsi and tail longer. There are only two, closely allied, species of this genus found in the Western Palæarctic Region, ranging south into North Africa—and two very slightly differing from them, *Daulias hafizi* (Severtz.), which inhabits Persia, and *Daulias golzii*, which inhabits Turkestan.

The Nightingales inhabit groves and woods, and are exclusively insectivorous, searching for their food chiefly on the ground. They form an open nest of leaves, and deposit four or five eggs of a uniform olivaceous-brown colour.

Daulias luscinia, the type of the genus, is a very plainly coloured bird. Its bill is moderate in size, straight, nostrils basal and nearly round; wings moderate, the first quill short, about as long as the coverts, second longer than the fifth, the third longest; tail rufous, slightly rounded; bristles on the gape very small; tarsus long, slender, with either one long plate or else obsoletely scutellate, and four inferior scutellæ; claws short, the middle toe with claw much shorter than the tarsus.



M & N Hannell del.

1. COMMON NIGHTINGALE.
LUSCINIA LUSCINIA.
2. NORTHERN NIGHTINGALE.
PHILOMELA PHOENICEUS.

DAULIAS LUSCINIA.

(COMMON NIGHTINGALE.)

- Ficedula luscinia*, Briss. Orn. ii. p. 397 (1760).
Motacilla luscinia, Linn. Syst. Nat. i. p. 328 (1766, partim).
Sylvia luscinia, Scop. Ann. I. Hist. Nat. p. 154. no. 227 (1769).
Le Rossignol, Montb. Hist. Nat. Ois. v. p. 81 (1778).
Curruca luscinia (L.), Koch, Baier. Zool. i. p. 154 (1816).
Daulias, Boie (*Sylvia luscinia*, L.), Isis, 1831, p. 542.
Luscinia megarhynchos, C. L. Brehm, Vög. Deutschl. p. 356 (1831).
Luscinia media, C. L. Brehm, op. cit. p. 357 (1831).
Luscinia okenii, C. L. Brehm, op. cit. p. 357 (1831).
Luscinia peregrina, C. L. Brehm, op. cit. p. 358 (1831).
Philomela luscinia (L.), Selby, Brit. Orn. i. p. 206 (1833).
Luscinia philomela, Bp. Comp. List, p. 15 (1838, nec Bechst.).
Lusciola luscinia (L.), Keys. & Blas. Wirbelth. Eur. p. 58 (1840).
Erythacus luscinia (L.), Degl. Orn. Eur. i. p. 499 (1849).

Rossignol ordinaire, French; *Ruxinol*, Portuguese; *Ruiseñor*, Spanish; *Rusignuolo*, Italian; *Rosignol*, Maltese; *Moui el hasin*, *Umm el hasin*, Moorish; *Nachtigall*, *Waldnachtigall*, German; *de Nachtegaal*, Dutch; *Lapadnoy solovey*, Russian.

Figuræ notabiles.

D'Aubenton, Pl. Enl. 615. fig. 2; Werner, Atlas, *Insectivores*, pl. 31; Kjærbo. Orn. Dan. taf. 22B; Fritsch, Vög. Eur. taf. 22. figs. 4 & 11; Naumann, Vög. Deutschl. taf. 74. fig. 2; Gould, B. of Eur. pl. 116; id. B. of G. Brit. ii. pl. 56.

Ad. capite et corpore suprâ rufescenti-fuscis: supracaudalibus et caudâ saturatè ferrugineis: remigibus saturatè fuscis, extûs rufescente fusco marginatis: corpore subtûs griseo-albido: mento, gulâ et abdomine centraliter fere albis: pectore pallidè griseo-fusco lavato: hypochondriis et subcaudalibus pallidè rufescente fusco lavatis: rostro fusco, mandibulâ ad basin pallidiore: iride saturatè fuscâ: pedibus brunneis.

♀ haud a mare distinguenda.

Juv. corpore suprâ saturatiore et ochraceo guttato: subtûs pallidè fusco-ochraceo lavato, plumis vix griseo-fusco marginatis.

Adult Male (Piedmont, 20th April). Upper parts generally uniform rich brown, tinged with rufous; upper tail-coverts and tail rich dark rusty red; quills dark brown, externally margined with reddish brown; underparts dull greyish white, lighter on the chin, throat, and centre of the abdomen, and tinged with pale greyish brown on the breast; flanks and under tail-coverts washed with pale warm reddish brown;

bill dark brown, the under mandible paler; legs lighter brown; iris hazel. Total length about 6.25 inches, culmen 0.65, wing 3.3, tail 2.65, tarsus 1.05; first primary short, but extending 0.2 beyond the coverts, being 1.65 shorter than the second; the third, which is the longest, is 0.22 longer than the second.

Adult Female. Undistinguishable in plumage from the male.

Young. Darker in general coloration than the adult bird, the feathers on the upper parts marked with a warm ochreous shaft-spot; underparts washed with brownish yellow, the feathers having greyish brown edges, which form irregular bars.

THE range of this, our common British Nightingale, is more southern and western than that of the Sprosser, or Northern Nightingale. It is found throughout Western and Central Europe, as far north as Great Britain, and is also common in Southern Europe, passing south into Africa for the winter.

In the British Isles it appears to be restricted to England; for the statement in Macgillivray's 'British Birds' (ii. p. 334) that a pair was believed to have visited Calder Wood, in Midlothian, in 1826, and that by Mr. Turnbull to the effect that it was heard near Dalmeny Park in the same county, in June 1869, are open to grave doubt. Professor Newton says (Yarr. Brit. B. ed. 4, i. p. 316) that the western limit of the present species "appears to be formed by the valley of the Exe, though once, and once only, Montagu, on this point an unerring witness, heard it singing (on the 4th of May, 1806) near Kingsbridge, in South Devon, and it is said to have been heard at Teignmouth, as well as in the north of the same county at Barnstaple. But even in the east of Devon it is local and rare, and it also is so in the north of Somerset, though plentiful in other parts of the latter. Crossing the Bristol Channel, it is said to be not uncommon at times near Cowbridge, in Glamorganshire, the information to this effect (confirmed by an example of the bird shot in May 1855 near the Perthkerry Woods in that locality) having been kindly communicated by Mr. Robert Boreter, of Llandaugh Castle, and announced in the last edition of the present work. Dr. Bree states (Zool. p. 1211) that it is found plentifully on the banks of the Wye, near Tintern; and thence there is more or less good evidence of its occurrence in Hertfordshire, Salop, Staffordshire, Derbyshire, and in Yorkshire to about five miles north of its chief city, but, as Mr. Thomas Allis states, not further. Along the line thus sketched out, and immediately to the east and south of it, the appearance of the Nightingale, even if regular, is in most cases rare, and the bird local; but further away from the boundary it occurs yearly with great regularity in every county, and in some places is very numerous. Mr. More states that it is 'thought to have once bred near Sunderland,' and it is said to have been once 'heard in Westmoreland, and also, in the summer of 1808, near Carlisle;' but these assertions must be looked upon with great suspicion, particularly the last, which rests on anonymous authority only." In Ireland it is not known to have occurred; nor has it been met with in Norway, Sweden, or Finland; but Mr. Sabanäeff informs me that he believes it is found in the Moscow Government. According to Eversmann it breeds on the Southern Volga and in the Southern Ural, as also in the Voronege, Orloff, and Charkoff Governments; and Kessler says that it is rather scarce in the Kieff districts. It is, however, possible that some of these records may refer to the closely allied *Daulias*

philomela; for in North Germany it is stated by Borggreve to be wanting on the coast, and not occurring in the portion of Pomerania which lies north of the river Peene, nor does it reach so far east as Dantzic. In the other portions of North Germany, and especially in Mecklenburg, it is commonly distributed throughout the summer in suitable localities. As regards its recorded occurrence in Denmark, Mr. Benzon writes to me as follows:—"The Southern Nightingale is a very rare visitant to Denmark, and has no special Danish name. I do not know of any specific instance of its occurrence; and, excepting the statement that Mr. Scheel, who is a careful observer, met with it on Möen, I cannot but consider that the data respecting its occurrence given by Kjærbølling are erroneous, and based on a mistake between it and *Daulias philomela*." In Holland, Belgium, and France it is generally distributed in the summer, arriving in April and leaving in September; and Professor Barboza du Bocage speaks of it as being numerous in Portugal. It is a summer visitant to Spain, arriving, according to Colonel Irby, at Gibraltar about the 12th April; and after remaining about ten days or a fortnight they pass on—though they have occasionally been known to nest there, as in 1871. Mr. A. von Homeyer met with it in the Balearic Isles, where, however, he says it does not remain, but passes northward to breed. Salvadori says that it is common in Italy from May to October, and it visits Sicily on passage; but, according to Doderlein, comparatively few pairs remain there to breed. Mr. C. Bygrave Wharton points out to me that it arrived in Corsica on the 16th April, not on the 16th March as stated in error in his article in 'The Ibis' for January this year; and Mr. C. A. Wright says (Ibis, 1864, p. 66) that it visits Malta in flocks in April and May, and again towards the middle of August or in September. Lord Lilford writes of it (Ibis, 1860, p. 230):—"Very common in Corfu and all parts of the mainland that I have visited during the summer; at Delvino especially, in May 1857, we could hardly sleep for the multitude of Nightingales that were singing on the banks of a little stream that ran under the windows of the house in which we lodged." Dr. Krüper says that it is not rare in Greece in bush-covered and well-watered localities, and occurs also in the Cyclades. In Acarnania it arrived on the 27th March in 1859, and on the 4th April in 1860; on the Parnassus on the 15th April in 1865, and on the 15th April in 1866; in Attica on the 29th March in 1867, on the 13th April in 1873, and on the 6th April in 1874; at Thessalonica on the 8th April in 1869; and on Olympus on the 12th April in 1870. It has eggs early in May, and leaves in August, none remaining over winter. Erhard says that it is a migrant on the Cyclades, but it breeds on Naxos. Drummond-Hay says that it is common and breeds in Crete.

In Southern Germany it is rapidly decreasing in numbers, owing to the persecution it suffers from the bird-catchers, and is said to be completely extirpated near some of the Bavarian towns. It is, Dr. Fritsch states, rare in Southern Bohemia, and has entirely disappeared from the vicinity of Frauenburg since 1861; but it still breeds numerously near Prague, and is very common along the Elbe, near Brandeis and Elbekosteletz, as also in the vicinity of Laun. E. Seidensacher informed me that a few breed in Styria, near Storé and Pollulle. It arrives there about the middle of April. It is generally distributed throughout Austria; and Messrs. Danford and Harvie-Brown state that it is common in Transylvania, arriving in April and leaving in September. Professor von Nordmann speaks of it as being abundant in Southern Russia from the spring to the autumn, and says that those of the Government of Pultava are reputed to be far

superior songsters to those found in the Crimea. Mr. Goebel says that in the Uman district it is rare, and for every one of the present species at least twenty of *Daulias philomela* are met with. Dr. Krüper states that it is not uncommon in Asia Minor, and arrived near Smyrna on the 2nd April in 1863, and on the 10th April in 1864. Strickland heard its song first on the 5th April at Hushak; Canon Tristram met with it in Palestine, where it is generally distributed, arriving late in March, and breeding in the Jordan valley and other sheltered spots; and Kotschy observed it in Cyprus. It occurs in Arabia and Egypt; and Captain Shelley writes (B. of Egypt, p. 88) as follows:—"Although the Nightingale ranges throughout Egypt and Nubia during the winter, it is far from being common. I only once saw a pair, and heard their well-known notes, while reposing, during the heat of the day, in a small wood near Bedreshayn, in the latter end of March." Von Heuglin says that it appears on passage in March and September in Egypt, Arabia, Nubia, and Abyssinia, usually singly, but sometimes in small scattered companies. Dr. A. E. Brehm states (J. f. O. 1854, p. 457) that it ranges as far as Sudahn, and that he observed it near the town of Berber on the 7th and 10th of September. It is said to breed in Algeria. Mr. Salvin met with it in a wooded ravine near Khifan Msakta early in April; and Mr. Taczanowski observed it at Bouarif in January. M. Favier states (*fide* Colonel Irby) that it is "very common around Tangier, arriving during March and April, passing on across the Straits to return in August and September; but great quantities remain to breed about the thick bushy places, chiefly constructing their nests with the fibres of the palmetto, the same materials used by the Arabs in making their tents." As regards its eastern range, I cannot trace it beyond the localities above mentioned. Ménériés certainly stated that it was found in the Caucasus; and De Filippi, in Persia; but Mr. Blanford informs me that the birds obtained by these two gentlemen must have been referable to *Daulias hafizi*, Severtzoff, and not to the present species.

This, the best-known and most highly esteemed of our songsters, is essentially a bird of the woodlands, and is always found in the groves or woods on the plains, never in the mountains or in conifer-woods, but in tolerably low non-evergreen growth where there is a fairly abundant undergrowth, and where the soil is rather damp, or where damp ditches or water is not far distant. It is a very unobtrusive bird; and although the song of the male may be heard daily, it is astonishing how seldom a casual observer obtains a glimpse of the bird itself. The males arrive first in the spring, and appear to be wearied and travel-worn when they first appear; but they soon recuperate, and when, after the lapse of a few days, the females commence to appear they have recovered their usual sprightliness and soon break out into their matchless song, which may be heard until the young are hatched. The song of this bird is with justice considered to be the richest and most melodious of all of our songsters'; and it is impossible to reproduce its notes in words so as to give any idea of it. No bird has so varied and sweet a song; and it is so rich and full that one is astonished that it can be produced by so small a bird. There is, however, much individual difference in the quality of the song of birds from different localities, as is well known by all the bird-fanciers, especially by the Germans; and Naumann remarks that those from Pomerania are the worst songsters, whereas those from Wörlitz, in Anhalt-Dessau, are the best he ever heard.

As a rule, the Nightingale is not a shy bird; and far from shunning the presence of man, it appears in preference to take up its abode somewhere in the vicinity of inhabited places. Nor is

it a quarrelsome bird towards others of its own species, except during the pairing-season, when frequent disputes occur amongst the males. It usually frequents the lower branches of the trees or the bushes, where it does not move about much, but sits with the wings rather drooped; and when it moves it usually flirts its tail, which, when the bird is sitting, is held in an almost horizontal position. When on the ground it carries the body erect, and looks very long-legged; it progresses by means of long jumps, and after taking ten or a dozen it usually stands still, pauses for a moment, as if thinking of what is next to be done, and then, with a flirt of the tail, hops on again. Its food, which is chiefly picked up from the ground, consists of worms, insects, and especially of insect-larvæ; and it frequently searches for insects in old rotten timber and moss; it is also said to be very fond not only of the larvæ of ants (or so-called ants' eggs), but also of the ants themselves. Naumann says that it is partial to currants, both red and black, when ripe, and is very fond of elder-berries. Insects, however, are its staple food; and its partiality for a meal-worm renders it an easy victim to the bird-catchers. Large numbers are trapped every season; but few survive; for it is certainly one of the most difficult species to keep in confinement. Most of the birds are caught soon after they arrive; and but comparatively few of these are females. According to Mr. Harting (*vide* Newton, *l. c.*), "in the year 1867 three London bird-catchers, between April 13th and May 2nd, took two hundred and twenty-five Nightingales—all, except some half dozen, cock birds. The previous year the same men supplied the dealer who employed them with two hundred and eighty Nightingales, of which not more than sixty were hens."

When both males and females have arrived from the south they soon commence nidification, and appear to resort to their old breeding-locality. At first not a few conflicts for the possession of the coveted locality take place; but when they have all selected their mates each pair seem to settle down quietly in a suitable place; and they then live in amity together, though each pair assert the right of possession in their own small domain. The site for the nest is selected in a garden where the hedges are thick, or in a well-shaded lane, or else in a wood where the under-wood is not too dense, and where the grass and low growth is thick in places. The nest is placed either on or close to the ground, in the latter case usually not more than a foot or so high, in a bunch of twigs, in an old tree-trunk, or in a dense hedge or bundle of faggots. The structure is composed outside of dry leaves, usually of the oak, inside which are a few dry bents, and sometimes rushes or even fine flags; and the cup is carefully lined with fine roots and bents, and occasionally a little horsehair is added. The eggs, from four to six in number, are deposited in May, only one brood being raised in the season. They are uniform deep olive-brown in colour, sometimes with a greenish tinge, and occasionally tinged with reddish brown on a greenish blue or an olive-green surface, which is sometimes entirely and sometimes only partially exposed; and not unfrequently the brown is collected at one end of the egg. In size they vary from about $\frac{3.5}{4.0}$ by $\frac{2.7}{4.0}$ to $\frac{3.0}{4.0}$ by $\frac{2.2}{4.0}$ inch.

When the young are hatched the male ceases its song, and appears to devote its time to procure food for its offspring. Should danger threaten, a single loud croak is uttered as an alarm-note, occasionally accompanied by a snapping of the bill. Its usual call-note is a clear, somewhat prolonged, *wid* or *weed*; and pleasure is expressed by a deep note like *tack*. Its flight is swift and light; but it usually flies only short distances from bush to bush, and, during the

daytime at least, it never seems to fly across any larger open space: yet its power of flight must be by no means inconsiderable, as it traverses considerable distances on passage.

The specimen figured, on the same Plate with *Daulias philomela*, is the one described, an adult male from Piedmont.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a, b, ♂. Hampstead, May 1870 (*Davy*). *c*, ♂. Hampstead, April 14th (*Davy*). *d*, ♂. Valencia, Spain, April 17th, 1872 (*H. Saunders*). *e*, ♀. Piedmont, May 1868. *f, g, h*, ♂. Piedmont, April 1870 (*Count Salvadori*). *i*. Alexandria (*S. S. Allen*).

E Mus. Howard Saunders.

a, ♀, b, ♂. Valencia, April 19th and 27th. *c, d*, ♂. Granada, April and May. *e*, ♂. Valencia, May 5th. *f*, ♂. Malaga, August 19th.

DAULIAS PHILOMELA.

(NORTHERN NIGHTINGALE.)

- Ficedula luscinia major*, Briss. Orn. iii. p. 400 (1760).
Le Grand Rossignol, Montb. Hist. Nat. Ois. v. p. 113 (1778).
Motacilla luscinia major, Gmel. Syst. Nat. i. p. 950 (1788).
Motacilla philomela, Bechst. Gemeinn. Naturg. Deutschl. iv. p. 536 (1795).
Sylvia philomela, Bechst. Orn. Taschenb. i. p. 167 (1802).
Curruca philomela (Bechst.), Koch, Baier. Zool. i. p. 154 (1816).
Luscinia major, C. L. Brehm, Vög. Deutschl. p. 355 (1831).
Luscinia philomela (Bechst.), op. cit. p. 356 (1831).
Philomela magna, Blyth in Rennie's Field Nat. i. p. 307 (1833).
 "Philomela turdoides, Blyth," Gould, B. of Eur. pl. 117 (1837, nec Meyer).
Lusciola philomela (Bechst.), Keys. & Blas. Wirbelth. Eur. p. 58 (1840).
Erithacus philomela (Bechst.), Degl. Orn. Eur. i. p. 501 (1849).
Luscinia eximia, C. L. Brehm, Vogelfang, p. 144 (1855).
Luscinia hybrida, C. L. Brehm, op. cit. p. 145 (1855).

Rossignol progné, *Grand Rossignol*, French; *Rusignolo-forestiero*, Italian; *Sprosser*, *Auen-nachtigall*, German; *Nordlig Nattergal*, Danish; *Nordliga näktergal*, Swedish; *Satakielikerttu*, Finnish; *Solovey*, Russian.

Figuræ notabiles.

Werner, Atlas, *Insectivores*, pl. 32; Kjærb. Orn. Dan. taf. 22; Fritsch, Vög. Eur. taf. 22. fig. 10; Naumann, Vög. Deutschl. taf. 74. fig. 1; Sundevall, Svensk. Fogl. pl. 12. fig. 3; Gould, B. of Eur. pl. 117.

♂ *ad.* *D. luscinia* similis sed major, pectore indistinctè guttato, remige extimo brevior et angustior.

♀ *ad.* haud a mare distinguenda.

Adult Male (near Stehag, Sweden, 16th May). Larger in size than *Daulias luscinia*, and less rufous in colour; breast marked with indistinct spots. Total length about 7 inches, culmen 0.6, wing 3.6, tail 2.8, tarsus 1.18; first primary very short and narrow, 0.4 shorter than the coverts, and 2.2 less than the second, which is about 0.1 less than the third, which is the longest; fourth shorter than the second.

Adult Female (Volga). Undistinguishable from the male.

THIS, the "Sprosser" of the Germans, a species closely allied to our Nightingale, does not occur in Great Britain, but is during the summer widely distributed on the continent of Europe, at least as far east as the Ural, visiting Africa during winter; but it has a more northern and eastern range than *Daulias luscinia*.

It appears to be the only Nightingale found in Scandinavia: not recorded from Norway, it occurs in Sweden, though only in the southern provinces, as for instance Skåne, the southern portion of Halland, Blekinge, the southern portion of Calmar Län, Öland, and Gottland; but it is local, and nowhere common. Meves says that he met with it at Borgholm, Horn, Carlskrona, Börringe, and Stehag, but everywhere in small numbers. It is also met with in Finland; but Magnus von Wright says (Finl. Fogl. p. 122) that, though nowhere common, it occurs in most parts of Eastern Finland, and has been met with as far north as Leppävirta in Kuopio Län, where he and two of his brothers shot specimens. He also shot one at Rautalampi, and has heard it at Iokkas, Rantasalmi, and St. Michael, in all of which localities it occurs annually, and is, according to Mr. J. von Wright, common at St. Michael. In 1856 Mr. A. von Nordmann shot one at Helsingfors. On the 16th May Meves heard it singing near Wiborg and near the Ladoga at Dubno; and at Andoma it was not rare. It is also, he says, stated to occur near Kargapol.

Sabanäeff informs me that it is found throughout Central Russia, and is commoner near Jaroslaf than Moscow, but it does not range far north. Liljeborg met with it near Wuitegra. On the south-eastern slope of the Ural it is, Sabanäeff says, very rare, but occurs near Ekaterinburg. Of late years only has it been observed in the southern portion of the Tagilskaya Dacha. On the western slope it is commoner, and probably occurs as far north as 59° N. lat. It is said to be found during the summer in Poland and the Baltic Provinces in suitable localities; but I have no details respecting its range in these countries. Borggreve says that it replaces the common Nightingale in Pomerania, Prussia, and on the eastern frontier of Posen, but appears to be almost wanting in other parts of North Germany, or else of very rare occurrence. Naumann says that it is an eastern bird, being more numerous than the common Nightingale in Hungary and Poland, and also in Austria, but rarer in Silesia, Bohemia, and the rest of Germany. It inhabits the shores of the Danube, the Oder, Elbe, Mulde, Saale, and other rivers of Germany, but is usually found singly, though near Dessau it is not rare. Naumann remarks that he never met with it except close to the large rivers, where it frequents the flat country.

Mr. Benzon, writing to me from Copenhagen, says, "the name most in use here for *Daulias philomela* is *Nattergal*, except in Bornholm, where it is called *Fjeldstavn*; and the names *Stor-Nattergal*, *Dobbel-Nattergal*, and *Sprosser-Nattergal* are only used by bird-dealers and others who know the southern species also. It appears to be the only Nightingale inhabiting Denmark, and is in many localities common, as for instance on Bornholm, here and there in South Jutland and in portions of Laaland; but in Jutland it does not appear to range above Aarhus. It is not so common in Seeland and in other portions of the islands, chiefly because it is so persecuted by bird-catchers that in fact it is almost extinct in some parts; but the Act protecting small birds recently passed appears to have had the good effect of rendering it more numerous during the last two years in North-eastern Seeland. It usually arrives here late in April or early in May, and leaves in August. I have often heard its well-known song, and have frequently been treated to a nocturnal concert when in Bornholm, and have noticed the great individual differences in the quality of the song: the younger males appear to lack the depth and power of song possessed by the old birds; and there are many gradations of excellence in the songs of different individuals.

On our islands it frequents small groves in the flat, fertile portions where water is abundant but on Bornholm it frequents the grassy parts of the small valleys through which a stream flows, especially places which are near the peasants' houses."

It does not appear to have been met with in Holland or Belgium; and though Messrs. Degland and Gerbe state that they have seen two examples which were obtained near Paris, yet it appears to me that there may possibly be a mistake, as it has not otherwise been met with so far west; Messrs. Jaubert and Barthelémy-Lapommeraye say that it does not occur in the south of France, and that Crespon, who included it amongst the birds of Provence, was clearly unacquainted with the real bird. It does not occur in Spain; and it must probably be an error that Professor Barboza du Bocage includes it in his list of the birds of Portugal. Passing eastward, again, I find that Messrs. Meisner and Schinz say that it occurs in Switzerland, but is much less numerous than the common Nightingale. It is generally met in the warmer portions of that country—as in Tessin, Leman, Wallis, &c.

It is said to have been obtained in Italy; but Salvadori doubts the authenticity of the specimens stated to have been procured there, and adds that Cara's supposed example from Sardinia is nothing but *Daulias lusciniæ*; and Professor Doderlein, in confirming this, adds that he does not believe that it has ever been obtained in Sicily.

It appears to be somewhat rare in Southern Germany, except perhaps in the Austrian dominions. Dr. Anton Fritsch says (J. f. O. 1871, p. 198) that it is found but rarely in the vicinity of Prague, and he is uncertain as to whether it breeds in Bohemia. I did not observe or hear of it when in Styria; but it passes through Greece during the two seasons of migration, and is doubtless met with in Turkey. Professor von Nordmann speaks of it as being rarer in Southern Russia than the common Nightingale; but Mr. H. Goebel states (J. f. O. 1870, p. 444) that for every one individual of *Daulias lusciniæ* he has met with at least twenty of the present species in the Uman district, where it is extremely numerous in all suitable localities. It was not observed by Canon Tristram in Palestine; but it occurs in North-east Africa, though it is not met with on the north-western side of that continent. Dr. Brehm found both species of Nightingale in small companies in Berber, between the 7th and 10th September; and Von Heuglin observed it in Lower Egypt between the 10th and 25th March, and in September near Keren, in the Bogos country. Captain Shelley says that it is scarce in Egypt.

The present species is recorded with doubt by Ménériés from the Caucasus, but has been obtained in Turkestan, where two other closely allied forms are also found, viz. *Daulias hafizi*, Severtzoff (Turk. Jevotnie, p. 120), which was also met with in Persia by Mr. Blanford, and is by him stated to have a longer and more rounded tail, and has the plumage less rufous above and paler below. Mr. Blanford gives the measurements of a male as—wing 3·5, tail 3·05. A larger form of *Daulias hafizi* from Turkestan is also described by Dr. Cabanis (J. f. O. 1873, p. 79) under the name of *Luscinia golzii*. Mr. Blanford, who examined the type at Berlin, gives the measurements as—wing 3·8, tail 3·32, tarsus 1·15, culmen 0·72.

I have had but very meagre opportunities of studying the habits of this bird, and cannot do better than extract the chief portion of my notes respecting the same from Naumann, who has published extensive notes, the result of careful personal observation. This gentleman says that it closely assimilates to *Daulias lusciniæ* in general habits, being like that species unwary and

rather tame than otherwise, active, and graceful in its movements. It passes with ease amongst the branches, but deliberately, every now and again resting for a moment; and on the ground it hops four or five times in succession, then stands still for an instant, flirts its tail, and then either hops forward or takes wing. When moving, the wings are drooped below the level of the tail, the latter being carried rather erect, and spread when it takes wing. Its call-note differs from that of *Daulias lusciniæ*, and may be rendered by the syllables *glock-arr*; and the song of the male is still more different, being deeper, more hollow in tone, and more resonant, not quite so varied in its strophes, slower in measure with longer pauses between the strophes, and scarcely as soft and sweet, though far more powerful. Individually the song varies not a little, some birds being much better songsters than others. The song of the male is heard in May to the end of June, but after Midsummer they gradually become silent. It sings most sweetly in the early morning and late in the evening, and also during the night, the song being heard in May at all hours of the night. When singing the bird does not perch high in the trees, but usually on one of the lower branches or in a bush. Owing to its powerful and melodious song it is very generally kept in confinement as a cage-bird, and in some countries is considered a better songster than the common Nightingale. It feeds on insects of various kinds; but in the autumn, Naumann says, it will also at times feed on berries. It usually seeks after food on the ground, where it picks up worms and insects and insect-larvæ, especially those which are found about old rotten stumps and amongst old fallen leaves; and it is fond of searching after worms in places where the soil has recently been disturbed.

Naumann remarks that the present species of Nightingale is particularly partial to damp localities, being, so far as his experience goes, always found in the wooded lowlands close to the large rivers, or else where there is abundance of water. It arrives in Germany, as a rule, rather later than the common species, but breeds about the same time as that bird, always selecting, however, damp localities, which *Daulias lusciniæ* does not do. Naumann says, in proof of this, that a pair bred in a small wood belonging to him in the very wet season of 1771, when the ground in the wood was almost covered with water, and in no other season were they met with there; but the common species usually bred in the same wood, though in the season above referred to they deserted it, and were replaced by the present species.

The nest of *Daulias philomela* resembles that of *Daulias lusciniæ*, being composed outside of dead leaves, the inner portion being constructed with dried grass-bents, fine rootlets, &c. &c. It is placed either on the ground or else (Naumann says) on an old stump which has commenced to throw out new shoots, and is usually carefully concealed. From some notes received from Mr. Benzon, of Copenhagen, I translate the following respecting the nidification of the present species:—"The nest is placed on the ground or an old stump, well hidden under a bush or a bunch of herbage. It is composed of leaves, the inner cup being of grass-bents, and measures 50 millims. in diameter, and 40 millims. in depth. The number of eggs deposited is usually five; and only in one instance do I know of a nest having been found with six. Here in Denmark the eggs are deposited from the 1st to the 20th of June. They are glossy in texture of shell, olive-brown or dull greenish olivaceous in colour, usually unspotted; but sometimes one finds them marked with pale dull olive-brown dots, which are sometimes collected round the larger end, forming a sort of wreath. Occasionally I have also seen eggs which are dull brownish at one

end. They are rather more elongated in shape than the eggs of *Daulias lusciniæ*, and vary in size from 22 by 15·5 to 24 by 16·5 millimetres, one measuring 23 by 17·5."

I have received eggs from Mr. Benzon, obtained on the island of Bornholm, which agree with his description of the normal unspotted ones.

The specimen figured, on the same Plate with *Daulias lusciniæ*, is the adult bird above described.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a, ♂. Bjelkö, near Stehag, Sweden, May 16th, 1867 (*Sundevall*). *b*, ♂, *c*, ♀. Volga, May (*Möschler*).

E Mus. Howard Saunders.

a, ♂, *b*, ♀. Volga, May (*Möschler*). *c*, ♂, *d*, ♀. Astrachan, May (*Möschler*).

Genus SYLVIA.

- Ficedula* apud Brisson, Orn. iii. p. 372 (1760).
Motacilla apud Linnæus, Syst. Nat. i. p. 330 (1766).
Sylvia, Scopoli, Ann. I. Hist. Nat. p. 155 (1769).
Curruca apud Koch, Baier. Zool. i. p. 157 (1816).
Adophoneus apud Kaup, Natürl. Syst. p. 28 (1829).
Monachus apud Kaup, ut suprâ.
Alsoecus apud Kaup, ut suprâ.
Epilais apud Kaup, ut suprâ.
Erythroleuca apud Kaup, ut suprâ.
Ficedula apud Blyth in Rennie's Field Nat. i. p. 310 (1833).
Philomela apud Swainson, Classif. of B. ii. p. 240 (1837).
Nisoria apud Bonaparte, Comp. List, p. 15 (1838).
Adornis apud G. R. Gray, List of Gen. of B. p. 29 (1841).
Sterparola apud Bonaparte, Cat. Ucc. Eur. p. 37 (1842).
Pyrophthalma apud Bonaparte, ut suprâ (1842).
Melizophilus apud Cabanis, Mus. Hein. i. p. 35 (1850).
Dumeticola apud Von Homeyer, J. f. Orn. 1862, p. 277.

THE genus *Sylvia* has been considerably subdivided by various authorities, but, so far as I can judge, unnecessarily so; and instead of further dividing it, I should rather be inclined to unite to it one or more allied genera. Amongst the subdivisions I may name the following—viz. *Epilais*, Kaup (type *Sylvia salicaria*), *Alsoecus*, Kaup (type *Sylvia subalpina*), *Adophoneus*, Kaup (types *Sylvia orphea* et *Sylvia nisoria*), *Monachus*, Kaup (type *Sylvia atricapilla*), *Nisoria*, Bp. (type *Sylvia nisoria*), *Adornis*, G. R. Gray (type *Sylvia hortensis*), *Sterparola*, Bp., *Erythroleuca*, Kaup (type *Sylvia subalpina*), and *Pyrophthalma*, Bp. (type *Sylvia melanocephala*), the best of which appears to be *Epilais*, Kaup, as the Garden-Warbler differs in the form of its bill from all other European Warblers.

The present genus ranges throughout the major portion of the Palæarctic, Ethiopian, and Oriental Regions; and thirteen species are found within the limits of the Western Palæarctic Region.

The species belonging to the genus are migratory. They feed chiefly, indeed almost exclusively, on insects, and frequent woods, gardens, and groves. They are active and lively, and are all good songsters. They build open, cup-shaped nests, usually somewhat lightly constructed, though some species make tolerably strong and well-built nests; and their eggs are spotted and blotched with darker colour on a light ground.

Sylvia rufa, the type of the genus, has the bill rather short, somewhat wide at the base, decurved towards the point, which is slightly emarginate; nostrils basal, oval, and exposed; gape furnished with a few bristles; wings moderately long, the first quill very short, the third longest; tail slightly rounded; tarsus covered in front with five plates and three inferior scutellæ; feet rather small.



G. Keulemans lith.

M. & N. Hanhart imp.

WHITETHROAT.
SYLVIA RUFA.

SYLVIA RUFÆ.

(WHITETHROAT.)

- Ficedula curruca*, Brisson, Orn. iii. p. 372 (1760).
Ficedula curruca cinerea sive *cineraria*, Briss. Orn. iii. p. 376 (1760).
Motacilla sylvia, Linn. Syst. Nat. i. p. 330 (1766).
La Grisette ou Fauvette grise, Buff. Hist. Nat. Ois. v. p. 132; Pl. Enl. 579. fig. 3 (1778).
La Roussette, Buff. tom. cit. p. 139; Pl. Enl. 581. fig. 1 (1778).
Motacilla rufa, Bodd. Tab. des Pl. Enl. p. 35 (1783, ex D'Aubent.).
Sylvia cinerea, Lath. Ind. Orn. ii. p. 514 (1790).
Motacilla fruticeti, Bechst. Gemeinn. Naturg. Deutschl. iv. p. 555 (1795).
Sylvia fruticeti, Bechst. Gemeinn. Naturg. Deutschl. ed. 2, ii. p. 530 (1807).
Sylvia cineraria, Bechst. tom. cit. p. 534 (1807).
Curruca fruticeti (Bechst.), Koch, Baier. Zool. i. p. 157 (1816).
Curruca cinerea (Lath.), Koch, tom. cit. p. 157 (1816).
Curruca sylvia, Steph. in Shaw's Gen. Zool. xiii. ii. p. 210 (1826).
Curruca cineracea, C. L. Brehm, Vög. Deutschl. p. 420 (1831).
Curruca caniceps, C. L. Brehm, op. cit. p. 420 (1831).
Ficedula cinerea (Lath.), Blyth, in Rennie's Field Nat. i. p. 310 (1833).
Curruca cinerea, var. *persica*, De Filippi, Viag. in Persia, pp. 162, 348 (1865).
Sylvia affinis, Salvad. Atti R. Acad. Sci. Tor. iii. p. 291 (1868, nec Blyth).
Sylvia rufa (Bodd.), Newton in Yarr. Brit. B. ed. 4, p. 406 (1873).
- Fauvette grise*, French; *Sterpazzola*, Italian; *Dorn-Grasmücke*, *Weisskehlchen*, German;
Riet-vink, Dutch; *Torn Sanger*, *Graa Græsmutte*, Danish; *Graasanger*, Norwegian;
Tornsmyg, *Grå-sångare*, Swedish; *Harmajakerttu*, Finnish.

Figuræ notabiles.

D'Aubenton, Pl. Enl. 579. fig. 3, 581. fig. 1; Werner, Atlas, *Insectivores*, pl. 42; Kjarb. Orn. Dan. taf. 20; Fritsch, Vög. Eur. taf. 25. fig. 7, taf. 26. fig. 1; Naumann, Vög. Deutschl. taf. 78. figs. 1, 2; Sundevall, Svensk. Fogl. pl. 13. fig. 1; Gould, B. of Eur. pl. 125. fig. 1; id. B. of G. Brit. ii. pl. 57.

♂ *ad. ptil. æst.* pileo, capitis lateribus et collo postico, dorso et tectricibus alarum minoribus griseo-fuscis, pileo et capitis lateribus magis cinerascens: remigibus nigro-fuscis, primariis vix et secundariis valdè fusco-ferrugineo marginatis: tectricibus alarum majoribus et medianis eodem colore marginatis et apicatis: caudâ saturatè fuscâ, rectricibus extus pallidiore marginatis, rectrice extimâ utrinque fusco-albâ, parte basali pogonii interni exceptâ: subtus albidus, gutture imo et pectore sordidè rosaceo tinctis, hypochondriis et subcaudalibus pallidè fusco-cervino lavatis: rostro fusco, versus apicem nigro, ad basin mandibulæ flavo-carneo: iride flavo-fuscâ: pedibus flavido-carneis.

♀ *ad. mari similis sed sordidior, capite brunnescentiore, pectore pallidè fusco-cinereo nec rosaceo tincto.*

♂ *ad. ptil. hiem. capite et corpore suprà rufescentioribus, marginibus remigum latioribus et rufescentioribus : corpore subtùs pallidiore, pectore pallidè rufescente cervino tincto.*

Adult Male in summer (Christiania, 12th June). Crown, sides of the head, hind neck, back, and lesser wing-coverts greyish brown, more ashy on the crown and cheeks and more rufous on the back; quills blackish brown, the primaries narrowly and the secondaries broadly margined with rusty red; larger and median wing-coverts also broadly margined with this colour; tail dull dark brown, the feathers with lighter edges, the outer rectrix on each side brownish white, except on the basal and inner portions of the inner web; underparts white, the lower throat and breast washed with dull rose-colour, the flanks and under tail-coverts washed with pale buffy brown; bill brown, becoming blackish towards the tip, the base of the under mandible dull yellowish flesh-coloured; iris yellowish brown; legs yellowish flesh-coloured. Total length about 5·5 inches, culmen 0·48, wing 2·75, tail 2·52, tarsus 0·85; spurious primary very short, being 0·1 shorter than the coverts, the second, third, and fourth nearly equal in length, the second being rather the shortest.

Adult Female (Christiania, 12th June). Resembles the male, but has the head browner, the breast is washed with pale ashy brown, not dull rose-colour, and the coloration of the plumage generally is duller.

Adult Male in autumn (Turkey, 1st September). Differs in having the upper parts considerably more rufous, the edgings to the quills broader and richer, and the underparts rather clearer in colour, the breast washed with very pale warm buff.

Nestling (Belgium). Resembles the adult in autumn dress; but the upper parts are darker, and the breast and flanks are more washed with warm brownish buff.

THROUGHOUT Europe generally, up to about 65° N. lat., the Whitethroat is generally distributed; and it visits North Africa during the winter. In Asia it is only met with in the western portion, but is said to breed plentifully in Turkestan.

In Great Britain it is common during the summer season, arriving late in April and departing again for the south in the late autumn. Throughout the whole of England it breeds in considerable numbers, but becomes rarer in the northern counties. In Western Scotland, however, Mr. Gray says, it is particularly common, arriving in May and remaining until September. Mr. Graham informed him that it is found in Iona; and Mr. Sinclair traced it beyond Loch Sunart, in Inverness-shire; but it does not appear to occur on the Outer Hebrides. Mr. Saxby says that stragglers occasionally visit the Shetland Isles during warm summers, but seldom remain many days. Throughout Ireland, from south to north, it is a generally distributed and common summer visitant.

In Scandinavia it is met with from the extreme south up to from 62° to 65° N. lat. Mr. R. Collett informs me that it arrives in Norway a little before the middle of May, and leaves again early in September. Throughout the whole of the southern dales of that country it breeds plentifully, and is met with as far north as the frontier of Nordland, in about 65° N. lat. On the fells it is found as high up as the fir growth extends. Professor Sundevall states that it is very common in Southern Sweden, and he has observed it as far north as Helsingland, in 62°

N. lat. In Finland it is tolerably common, but not every year so numerous in the same localities. According to Von Wright it breeds near Kuopio; and Professor Malmgren says that it has been found breeding near Kajana, and is met with at Uleåborg, in 65° N. lat. In Northern Russia Mr. Meves met with it from Schlüsselburg to Archangel, where it was common; and Mr. L. Sabanäeff informs me that it is generally distributed throughout Central Russia, and, according to Kessler, is the commonest Warbler in the district of Kieff. In the Ural it extends, he says, to Bogosloffsk; and Teplouhoff met with it on the Obva river, in $58\frac{1}{2}^{\circ}$ N. lat. It is said to be common during summer in Poland and the Baltic provinces; and Borggreve states that at that season it is one of the commonest species throughout the whole of North Germany, more especially in the western portion. Kjærbölling writes that it is common in Denmark during the summer, arriving late in April or early in May, and leaving in September; and the same may be said respecting its occurrence in Holland, Belgium, and France. Professor Barboza du Bocage speaks of it as being a common summer visitant to Portugal; and Mr. Howard Saunders informs me that "it occurs at both seasons of migration on the east coast of Spain in tolerable abundance, but none appear to breed there; and west of Malaga it is rare;" but Colonel Irby writes (Orn. Str. Gibr. p. 87) that he never saw it near Gibraltar in winter, but that it breeds there abundantly, arriving in April. Throughout Italy it is generally distributed during the summer season, and is also met with in Sicily, where, however, comparatively few remain to breed; but Doderlein says that it is one of the first of the Warblers to make its reappearance in autumn; and Mr. A. B. Brooke found it common in summer in Sardinia. Lord Lilford met with it in Corfu in September and October. Dr. Krüper says that it is tolerably common in Greece, both in the hills and the plains, arriving late in March, and leaving in August and September. Drummond-Hay observed it in Crete in April. Throughout the whole of Southern Germany, the countries bordering the Danube, and Southern Russia it is a tolerably common and generally distributed species; and I have received many specimens from Turkey. In Asia Minor, Dr. Krüper says, it is a tolerably common summer visitant, arriving in March and leaving in September; and in Palestine it is resident and abundant. It winters in North-east Africa; but Captain Shelley says it is not common in Egypt. Von Heuglin says that it is only a migrant in North-east Africa, Arabia, and the islands of the Red Sea; it arrives in Egypt from August to October, and repasses again in March, wintering further south. He met with it at Kordofan and Habesch. Mr. Blanford, who met it in Abyssinia, says that it was not rare in Samhar, near Massowa, in the middle of August. It winters also in North-west Africa, and is common. Mr. Salvin met with it in the first week in April between the foot of the rock of Djebel Dekma and the river Medjerda; and other travellers who have visited Algeria also record it as found there in winter. M. Favier (*vide* Colonel Irby, Orn. Str. Gibr. p. 87) says that it "arrives about Tangier and crosses to Europe in April and May, returning to winter further south in September and October;" and Messrs. Shelley and Buckley observed it at Accra, on the Gold Coast. Messrs. Webb and Berthelot observed it in the Canaries; and Dr. C. Bolle states (J. f. O. 1854, p. 454) that it is found on all the islands where there are thorn bushes; but it has not been recorded from Madeira or the Azores. It is found in Western Asia; but it would appear that Pallas's statement that it inhabits Siberia rests on a very doubtful basis.

De Filippi observed it at Tabriz, in Persia, where it was breeding in the gardens late in

June; and Mr. Blanford informs me that it is more common in summer in the northern part of the country than in the south. Ménétriés met with it at Lenkoran; and Mr. Blanford found it far from scarce in the Elburz Mountains. He says that specimens collected by him in Persia are distinguishable by no constant character from European birds; and having compared his specimens, I can fully indorse this statement. Mr. A. O. Hume received one procured by Dr. King at Aboo on the 24th September, 1868, which appears to be the only instance of its occurrence in India; but Dr. Severtzoff informs me that it breeds commonly throughout Turkestan.

Exceedingly active and lively, the Whitethroat is a bird that is so often seen in our gardens as to be familiar to most of us. Its song, which is harsh and unmelodious, is frequently heard, and is one of the earliest notes that greets one's ear in the morning, as well as one of the latest heard in the evening. When singing, the throat is distended, and the feathers on the head raised; the bird accompanies its song with curious jerks and gesticulations of the body; and every now and then it will start off and fly a short distance whilst uttering its harsh notes. Sometimes it will rise into the air and keep fluttering with a wavering fitful motion for a few seconds, singing vigorously, and will then drop down onto its perch again. It will allow any one to approach quite close; but it creeps through the foliage with such agility that one soon loses sight of it. In confinement it is sprightly and entertaining, and not difficult to keep in health. It feeds during the spring and early summer almost entirely on insects and their larvæ; but so soon as the berries are ripe it eats various sorts of these fruits readily.

The Whitethroat arrives here in England late in April, the males appearing shortly before the females; and soon after the latter arrive they commence making their arrangements for nidification. The nest is placed in a bramble bush, amongst long grass, and weeds, or in a low bush, and usually close to, or a short distance above, the ground; but I have found it placed in an arbour at least six feet from the ground. It is tolerably firmly though lightly and openly constructed of grass-bents and dried stems and stalks of umbelliferous plants, and is lined with fine bents, and sometimes a little horsehair. The eggs, four or five, and sometimes six, in number, are greenish white, speckled and spotted with greyish olive or greyish stone-colour, mottled or marbled with light brown, and slightly tinted with green: some in the series in my collection have a few dark greenish grey spots at the larger end rather clearly defined; and one or two have the ground-colour of a pale warm (almost brownish) stone-colour. In size they vary from $\frac{2.6}{4.0}$ by $\frac{1}{2}$ an inch to $\frac{3}{4}$ by $\frac{2.3}{4.0}$ inch; and five or six is the number deposited. Mr. Collett informs me that he has observed that it frequently commences several nests before it settles on finishing one, the rest being left in a half-finished condition; and he describes the nests as being constructed of dried bents and plant-cotton, well lined with horsehair, the colour of the horsehair selected being usually black, white hair being seldom found in the lining of the nests of this species.

The specimens figured are an adult male in breeding-plumage and a male in autumn dress, these being the examples above described.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a. Hampstead, April 1870. *b, c.* Hampstead, May 1870. *d, e.* Hampstead, June 1870 (*Davy*). *f.* Pagham, July 8th, 1870 (*R. B. Sharpe*). *g, ♀.* Pagham, April 29th, 1872 (*R. B. Sharpe*). *h, ♀.* Christiania, June 12th, 1874 (*R. Collett*). *j, juv.* Belgium (*Dubois*). *i.* Switzerland (*Möschler*). *k, ♀.* Andalucia, May 7th, 1874 (*L. H. Irby*). *l.* Crimea (*H. Whitely*). *m.* Ortakeuy, Turkey, September 17th, 1871 (*Robson*). *n.* Ural, June 12th, 1872 (*Sabanäeff*). *o, ♂.* Kokand (*Dode*).

E Mus. Howard Saunders.

a, ♂. Volga (*Moeschler*). *b, ♂, c, ♀.* Valencia, March 8th and 28th. *d, ♂, e, ♀.* Valencia, April 22nd and 30th. *f, ♀.* Malaga, April 17th. *g, ♂.* Valencia, May 3rd. *h, ♂, i, ♀.* Granada, May. *j, ♀.* Malaga, October 5th.

E Mus. Ind. Calc.

a, ♂. Near Niriz, east of Shiraz, June 3rd. *b, ♂.* Near Shiraz, Persia, September. *c.* Behzár, near Shiraz, September. *d, ♂.* Karij valley, Elburz Mountains, August 8th (*W. T. Blanford*).



M & N Hanhart inv.

LESSER WHITETHROAT.
SYLVIA CURRUCA

SYLVIA CURRUCA.

(LESSER WHITETHROAT.)

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- Ficedula curruca minor*, Briss. Orn. iii. p. 374 (1760).
Ficedula curruca garrula, Briss. tom. cit. p. 384 (1760).
Motacilla curruca, Linn. Syst. Nat. i. p. 329 (1766).
Motacilla dumetorum, Linn. op. cit. p. 334 (1766).
Sylvia curruca, Scop. Ann. I. Hist. Nat. p. 155. no. 228 (1769).
La Passerinette, Buff. Hist. Nat. Ois. v. p. 123 (1778).
La Fauvette babillarde, Buff. Hist. Nat. Ois. v. p. 135 (1778).
Motacilla borin, Bodd. Table des Pl. Enl. p. 35 (1783, ex Buff.).
Motacilla passerina, Gmel. Syst. Nat. i. pt. ii. p. 954 (1788, ex Buff.).
Sylvia curruca (L.), Lath. Ind. Orn. ii. p. 509 (1790).
Sylvia sylviella, Lath. tom. cit. p. 515 (1790).
Sylvia dumetorum, Lath. tom. cit. p. 522 (1790).
Sylvia garrula, Bechst. Orn. Taschenb. i. p. 170 (1802).
Motacilla sylvia, Pall. Zoogr. Rosso-As. i. p. 488 (1811, nec Linn.).
Curruca garrula (Bechst.), Koch, Baier. Zool. i. p. 157 (1816).
Curruca sylviella (Lath.), Flem. Brit. Animals, p. 71 (1828).
Curruca dumetorum (Linn.), C. L. Brehm, Vög. Deutschl. p. 422 (1831).
Curruca molaria, C. L. Brehm, op. cit. p. 422 (1831).
Ficedula garrula (Bechst.), Blyth, Field Naturalist, i. p. 352 (1833).
Curruca affinis, Blyth, Journ. As. Soc. Beng. xiv. p. 564, note (1845).
Curruca superciliaris, C. L. Brehm, Vogelfang, p. 228 (1855).
Curruca septentrionalis, C. L. Brehm, ut suprâ (1855).
Curruca assimilis, C. L. Brehm, ut suprâ (1855).
Curruca obscura, C. L. Brehm, ut suprâ (1855).
Sylvia affinis (Blyth), Jerdon, B. of India, ii. p. 209 (1863).
Sylvia minuta, Hume, Stray Feathers, i. p. 198 (1873).

Bec-fin babillard, French; *Bigiarella*, Italian; *Zaun-Grasmücke*, *Klapper-Grasmücke*, German; *Gjerde-sanger*, Danish; *Græssmut*, Norwegian; *Ärtsångaren*, *Ärtsmyg*, Swedish; *Pensaskerttu*, Finnish; *Peresmeshka*, Russian.

Figuræ notabiles.

D'Aubenton, Pl. Enl. 579. fig. 2, 580, fig. 3; Werner, Atlas, *Insectivores*, pl. 43; Kjærbo. Orn. Dan. taf. 20; Frisch, Vög. Deutschl. taf. 21. fig. 3; Fritsch, Vög. Eur. taf. 26. fig. 2; Naumann, Vög. Deutschl. taf. 77. fig. 1; Sundevall, Svensk. Fogl. pl. 13. fig. 2; Gould, B. of Eur. pl. 125. fig. 2; id. B. of G. Brit. pl. 58.

♂ *ad.* pileo cinereo vix fusco tincto, versus nucham brunnescentiore: dorso, uropygio et tectricibus alarum fumoso-cinereis: remigibus nigro-fuscis, extus vix pallidè fusco-cinereo marginatis, secundariis intimis cinereo-albo marginatis: rectrice extimâ utrinque albo-cinereâ, in pogonio externo fere albâ, reliquis nigro-fuscis, extus pallidiore marginatis: loris et regione paroticâ nigro-fuscis: corpore subtus albo vix rosaceo tincto, hypochondriis pallidè rufescente et cinereo lavatis: rostro nigricante, ad basin mandibulæ fusco-flavido: iride cinereo-albâ: pedibus plumbeis.

♀ *ad.* mari similis sed sordidior, pileo brunnescentiore, loris et regione paroticâ pallidioribus, corpore subtus cinereo tincto.

Adult Male (Ortakeuy, Turkey, 24th October). Crown dull ashy grey with a faint brownish tinge, becoming browner on the nape; back, rump, and wing-coverts brownish smoke-grey; quills blackish brown, externally narrowly margined with ashy brownish grey, the inner secondaries edged with whitish grey; outer rectrix on each side whitish grey, the outer web nearly white, rest of the tail-feathers blackish brown with lighter edges; lores and ear-coverts blackish brown; underparts white with a faint rosy tinge, and tinged with pale rufous on the flanks; sides tinged with grey; bill blackish, the base of the under mandible yellowish brown; iris pearly white; legs lead-colour. Total length about 5.25 inches, culmen 0.45, wing 2.55, tail 2.3, tarsus 0.75; first primary short, being 1.1 shorter than the second, which is about equal to the fifth, but shorter than the fourth, which is about equal to the third.

Adult Female (Volga). Resembles the male, but is duller in colour, slightly less in size, the head is browner, the lores and ear-coverts are paler, and the underparts are tinged with grey.

THE Lesser Whitethroat inhabits Europe generally during the summer season, retiring into Africa during the winter; and in Asia it is met with as far east as Dauria and China.

In Great Britain it is by no means uncommon in many parts of the country, but is much more numerous in some seasons than in others, and is much more common in the eastern than in the western counties of England. Mr. A. G. More states (*Ibis*, 1865, p. 25) that it does not breed in Cornwall or Devon, nor does he believe that it nests in Wales, but in all other English counties, except Cheshire and Lancashire, it breeds regularly. Writing on the ornithology of Dorset, Mr. Mansel-Pleydell says that it is common in the northern and eastern counties, and he has often seen it at Whatcombe and Houghton. Professor Newton says he has continually seen it at Bloxworth towards the end of summer. The earliest record of its arrival in Dorset is 16th April, 1847. In Scotland, according to Mr. R. Gray (*B. of W. of Scotl.* p. 95), it is sparingly met with in some parts of Ayrshire, Renfrewshire, and Dumbarton, and extends to the middle of Argyleshire, beyond which he has not been able to trace it satisfactorily. On the east coast it is equally local and uncertain in its appearance; and, according to Dr. Turnbull, it is a rare visitant to East Lothian. It is also said to breed regularly in Stirlingshire. Dr. Saxby met with it in Shetland, at Hammer, in Unst, in September 1861, and again on two subsequent occasions. So far as I can ascertain, there appears to be no record of its having occurred in Ireland.

In Scandinavia it is met with, as elsewhere during the summer season, up to about 64° N. lat. Mr. Collett informs me that it breeds throughout the lowlands of Southern Norway up to the districts skirting the Trondhjems fiord in 58° to 64° N. lat., and is usually met with in young conifer growth. It has not been known to occur in Bergen Stift, and in the districts skirting

the coast. In the fells it does not ascend to any altitude, except in rare cases. Mr. Collett observed a pair in June 1872, in some small *Salix glauca* bushes at Jerkin, on the Dovrefjeld, at an altitude of 3300 feet above the sea-level. It arrives in Norway from the south about the middle of May, and leaves in September. In Sweden, Professor Sundevall says, it has about the same range as the common Whitethroat, being met with up to about 62° N. lat., but it is only common in the southern districts. Von Wright states that it is tolerably widely spread throughout Finland, but is everywhere rather rare than otherwise, and it will sometimes for years disappear from a locality where previously it was not rare. It has been obtained as far north as Uleåborg. Meves met with it in Northern Russia, at Schlusselfburg, Wuitegra, Cholmogory, &c.; and Mr. L. Sabanäeff writes to me that it is found in Central Russia, and northwards as high as Archangel. On the Volga it is found up to the northern portions of the Saratoff Government, but has not been observed in the Kieff district. Sabanäeff adds that he met with it throughout the Ural country. During the summer it is met with throughout the Baltic provinces and Germany, and appears to be tolerably common in most localities. Herr E. von Homeyer informs me that in Pomerania it is one of the commonest, if not the commonest, Warbler, arriving late in April, earlier than any of the others. It frequents the conifer-woods far from water, but is by no means particular as to choice of locality.

Kjærbølling says that it arrives in Denmark between the latter part of April and the early portion of May, and leaves in September. It is rarer in Jutland than on the islands and in the duchies. Mr. Fischer says that it is a somewhat rare bird in Vendsyssel. He found it breeding at Dronninglund on the 1st June, 1865. It breeds in Holland and Belgium, and is tolerably common there from late in April to September; and the same may be said respecting its presence in France, where, however, it is more numerous in the southern than in the northern provinces. It is stated by Professor Barboza du Bocage to occur in Portugal; and in Spain, according to Colonel Irby, it is rare; he observed one in his garden at Gibraltar in April, and another on the 19th April, 1872. Mr. Howard Saunders, however, states (*Ibis*, 1871, p. 212) that it is "abundant in winter and early spring, but does not remain to breed."

In Savoy, Bailly says, it is by no means abundant, although a regular spring visitant; and in Italy it is rather rare than otherwise; but in Sicily it is extremely common, especially in the vicinity of Palermo, but near Messina it appears to be rarer. As regards Sardinia it appears to be a regular visitor on migration; but Mr. A. B. Brooke says that it is not common. Mr. C. Bygrave Wharton informs me that he did not meet with it in Corsica; and, according to Mr. C. A. Wright, it is included in his list of the birds of Malta on the strength of a single specimen recorded in Schembri's catalogue. Lord Lilford shot one in Corfu, in September 1857, this being the only occasion he met with it; but Dr. Krüper says that on passage it is by no means rare in Greece and Asia Minor, though it breeds but rarely in the conifer-woods in the more elevated mountains. It arrives late in March: and near Smyrna the first arrived in 1863 on the 22nd of March, in 1866 on the 20th March, in 1871 on the 31st March, and in 1872 on the 17th March. The breeding-season commences about the end of April or early in May. On the 30th April 1866 he found a nest, with four eggs, in the Parnassus; and in 1873 he found eggs in the middle of May. In Southern Germany it is generally distributed, and tolerably common during the summer. Dr. Fritsch speaks of it as being numerous throughout Bohemia;

and the late Mr. Seidensacher told me that though it breeds sparingly near Cilli, as, for instance, at Lokroviz, he found it numerous in the central altitudes of the Bacher Mountains. Messrs. Danford and Harvie-Brown found it very abundant in Transylvania; I observed it in Rumania, and have received specimens from Turkey; and Professor von Nordmann states that in Southern Russia it is a regular resident from April to September. As above stated, it is common in Asia Minor; and Canon Tristram, who met with it in Palestine, states (*Ibis*, 1867, p. 84) that it is only a spring migrant to that country. In Africa it is found during the cold season. Von Heuglin says that it is tolerably common on passage in Egypt in March and April and from the end of August to October, and also occurs in Arabia, on the islands of the Red Sea, at Kordofan, in Nubia, and in Abyssinia. He adds that it is often met with far from water, in the desert and steppe. In North-west Africa it would appear to be less abundant; for Loche considers it to be a rather uncommon species in Algeria, and Favier does not record it from Tangier.

Eastward the present species is found as far as Dauria and China. A somewhat larger race from Asia has been separated under the name of *Sylvia affinis*; but I cannot think that it should be held to be a distinct species, as it differs only slightly in size, and is a trifle darker in colour. On looking over my series from various parts of Europe, I find that there is no slight variation in shade of colour, some being much greyer than others; and as regards size they vary as follows—culmen 0.45 to 0.48, wing 2.5 to 2.65, tail 2.2 to 2.3, tarsus 0.75 to 0.8, whereas one from Baluchistan measures—culmen 0.48, wing 2.5, tail 2.15, tarsus 0.75, and one from Etawah, North-west Provinces of India, measures—culmen 0.48, wing 2.6, tail 2.25, tarsus 0.75. Mr. Blanford had in his collection made in Persia a specimen from Khan-i-surkh, in Southern Persia, which he considered to be referable to *Sylvia affinis*, and which measured—wing 2.8, tail 2.18, tarsus 0.8. Blyth, in his description of his *Curruca affinis* (*l. c.*), states that it has the wing $2\frac{3}{4}$ inches long and the tarsus $\frac{1}{10}$ to $\frac{7}{8}$, being darker than the European form in general coloration. Mr. A. O. Hume, again, discriminates, under the name of *Sylvia minima*, a smaller race than our European bird, from Sindh, which, he states, has the wing only 2.3 to 2.4 inches long; but, he adds, that he found grave reasons for doubting whether a hard and fast line can be drawn between this and the largest race, which, he says, has the wing 2.65 to 2.75 inches long, as there are so many specimens in his collection intermediate in size. In this view I fully concur with him, and have therefore treated of all as belonging to the same species.

Ménétriés met with the Lesser Whitethroat at Lenkorán, on the Caspian, in the spring; but neither Mr. Blanford nor Major St. John observed it in Persia, though the former obtained five specimens, differing in no respect from our European bird, in Baluchistán, in the winter, at which season, he informs me, it abounded wherever bushes or trees were sufficiently thick to afford it suitable shelter. Mr. A. O. Hume says (*Stray Feathers*, i. p. 198) that it was no less abundant in Sindh than everywhere else about continental India during the cold season; and Dr. Jerdon speaks of it as being found over the greater portion of India during the cold season. Mr. Brooks states (*Ibis*, 1869, p. 57) that he thinks it breeds at Almorah; and Dr. Henderson (Lahore to Yarkand, p. 221) found it in Yarkand, chiefly at or near the foot of the hills, where it is very abundant, especially in the tamarisk jungles. To this Mr. Hume adds, “amongst the specimens obtained were nestling birds procured on the 15th August, right down in the plains of Yarkand; so that the bird probably breeds there in June and July.” Dr. Severtzoff

states that it breeds in Turkestan, and it is also found in Siberia. Dr. Radde only obtained a single example at the village of Tunka, on the 7th May, 1859; but, according to Mr. Taczanowski (J. f. O. 1872, p. 434), Dr. Dybowski says, "this common bird breeds in Dauria, and arrives here in the second half of May. Breeds in the low bushes in valleys in the early part of June; the female lays from five to six eggs, which are incubated by both birds. In autumn they remain as late as the 6th September. It is also common in the neighbourhood of Darasun." Mr. Swinhoe records it from China, and says that Père David found it very rare at Pekin, but common at Ordo. Mr. Gould has a specimen from Kalgan.

The present species has, in its habits, much in common with the common Whitethroat. Though a woodland bird, it does not affect the dense forest, but frequents groves and the outskirts of woods near inhabited places, gardens, shrubberies, &c., and is much less frequently met with in conifer-growth than in non-evergreen groves. In a garden where the bushes have been but little pruned and the hedges are large and thick the present species is almost sure to be found; for it affects low, somewhat dense growth, and is but seldom seen on a high tree. It is extremely lively and active, always on the move, and but seldom remaining long near the same place, is by no means shy, and, unless much molested, appears to fear the presence of man but little. Although so active and quick in his movements amongst the bushes, it is almost awkward on the ground, and hops about as if with some little difficulty. Its call-note is harsh, like that of the common Whitethroat, though less so than the note of that species; and the song of the male, which consists of a mixture of hasty twittering and somewhat flute-like notes, its breaks being linked by a frequent repetition of the syllables *sip, sip, sip*, is by no means unpleasant, though it somewhat lacks variety. It sings most industriously from early in the morning till late in the evening until the term of incubation commences, when it takes its turn with the female at sitting; and about Midsummer it gradually ceases to sing. When singing it keeps moving about; and when exerting itself in uttering its notes the throat is distended and the feathers on the crown and throat somewhat erected. It feeds chiefly on the small caterpillars which infest the buds and foliage of the bushes and plants, and on various kinds of insects and their larvæ, especially on aphides; but it also eats currants, berries of various kinds, and other fruits with avidity, especially later in the season, when insects are not so numerous. It builds its nest late in April, placing it in a low bush in a hedge, or a gooseberry bush, or in any dense foliage not high above the ground. It is very slightly built, though the structure is firm. The outside is composed of rather stout bents; and the lining is of fine bents, rootlets, and horsehair. The eggs, which are generally deposited early in May, are four or five in number, are white, boldly but sparingly blotched with dull light brown and purplish grey underlying shell-markings and darker brown surface-spots, these spot or blotches being more profuse and larger at the larger end of the egg. In size those in my collection average about $\frac{2.6}{4.0}$ by $\frac{1}{2}$ inch.

As regards the synonymy of the present species, I may here remark that Gmelin's *Sylvia passerina*, which is based on Brisson's description of *Ficedula curruca minor*, and on D'Aubenton's plate (Pl. Enl. 579. fig. 2), is by many authors considered to be the Subalpine Warbler; but after a careful comparison of this plate, as well as Brisson's description, I feel confident that the species described and figured by these authors is nothing but the Lesser Whitethroat.

The specimen figured is an adult male from Turkey, this being the bird above described.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

- a.* Near London, May 20th, 1870. *b.* Hampstead, September 1870 (*Davy*). *c*, ♀. River Volga, April (*Möschler*). *d*, ♂, *e*, ♂. Ortakeuy, Turkey, October (*Robson*). *f*, ♀. Syria (*Verreaux*). *g.* Baluchistan, February 3rd, 1872 (*W. T. Blanford*). *h*, ♂. Etawah, October 15th, 1867 (*W. E. Brooks*).

E Mus. H. B. Tristram.

- a.* Hampstead. *b*, ♂. Tiberias, March 29th, 1864 (*H. B. T.*). *c*, ♀. Mount Hermon, June 4th, 1864. *d.* Engedi, February 3rd, 1872. *e.* Moab, March 13th, 1872. *f*, *g*, *h*, *i.* Zara, east of the Dead Sea, March 4th, 1872 (*H. B. T.*). *k*, ♂. Karatau, Turkestan, May 12th, 1866 (*Severtzoff*).



SUBALPINE WARBLER.
SYLVIA SUBALPINA

SYLVIA SUBALPINA.

(SUBALPINE WARBLER.)

Sylvia subalpina, Bonelli, in Temm. Man. d'Orn. i. p. 214 (1820).*Sylvia passerina*, Temm. Man. d'Orn. i. p. 213 (1820, nec Gmel.).*Sylvia leucopogon*, Meyer, Taschenb. deutsch. Vogelk. iii. p. 91 (1822, ex MS. Heckel).*Curruca subalpina*, Boie, Isis, 1822, p. 553.*Curruca passerina*, Boie, ut suprâ (nec Gmel.).*Curruca leupogon*, Boie, ut suprâ.*Alsæcus*, Kaup (*S. leucopogon*, Meyer), Natürl. Syst. p. 108 (1829).*Erythroleuca*, Kaup (*S. passerina*, Temm.), op. cit. p. 153 (1829).*Curruca leucopogon* (Meyer), Gould, B. of Eur. pl. 124 (1837).*Sterparola subalpina* (Bonelli), Bp. Cat. Ucc. Eur. p. 37 (1842).*Curruca leucopogon* (Meyer), C. L. Brehm, Vogelfang, p. 229 (1855).*Curruca albistriata*, C. L. Brehm, ut suprâ (1855).*Babillarde subalpine*, French; *Sterpazzolino*, Italian.*Figuræ notabiles.*

Temminck, Pl. Col. 6. fig. 2, and 251. figs. 2, 3; Werner, Atlas, *Insectivores*, pls. 46, 47;
 Gould, B. of Eur. pl. 124.

♂ *ad.* suprâ saturatè schistaceo-cinereus, dorso, scapularibus et uropygio pallidioribus: remigibus et tectricibus alarum nigro-fuscis, his et secundariis extûs pallidiore marginatis: caudâ nigro-fuscâ vix cinereo tinctâ, rectricibus centralibus cinereo marginatis, rectrice extimâ utrinque albâ, in pogonio interno versus apicem fusco notatâ: mento, gutture et pectore lætè hepatico-castaneis, striâ utrinque mystacali albâ: corpore subtûs imo albido vix rufescente induto, hypochondriis cinereis: rostro corneo, ad basin mandibulæ flavicante: iride fuscâ, marginibus palpebrarum rubris: pedibus pallidè brunneis.

♀ suprâ sordidior et brunnescentior, corpore subtûs albido vix cervino tincto, gutture et pectore vix rufescente tinctis, hypochondriis brunnescenti-cervinis.

Adult Male (Olympus, 9th March). Crown, sides of the head and neck dark plumbeous ashy; back, scapulars, and rump also dark cinereous, but lighter than the head; quills and wing-coverts blackish brown, with lighter margins to the secondaries and wing-coverts; tail blackish brown, with an ashy tinge, and ashy margins to the central rectrices, outer rectrix white, slightly marked with brown towards the tip of the inner web, second feather dark brown, marked with white on the tip; throat and upper breast rich ferruginous chestnut; a white line passes from the base of the bill down each side of the neck bordering the red; rest of the underparts white, marked with reddish; flanks pale ashy grey; bill dark horn, light yellowish at the base of the lower mandible; iris brown, edge of eyelid reddish; legs fleshy brown. Total length about 5 inches, culmen 0·5, wing 2·45, tail 2·15, tarsus 0·75.

Adult Female (delta of the Nile, 1st April). Differs from the male in having the upper parts uniform ashy brown, the wings and tail browner than in the male, the margins to the secondaries and wing-coverts dull light brown with a fulvous tinge; on the throat there is no trace of the chestnut-red, but the entire underparts are white with a warm buffy tinge, the sides of the breast and flanks being brownish buff.

Obs. In very old females there is a slight indication of the rufous coloration on the throat. One from Smyrna has the throat marked here and there with pale rusty red.

Obs. Temminck, who included the present species under two names, believed that *Motacilla passerina* of Gmelin was this species; but after a most careful examination of D'Aubenton's figure and Brisson's and Buffon's descriptions, on which Gmelin's name was founded, I think it far more probable that the bird they describe and figure was a Lesser Whitethroat, and not the Subalpine Warbler. I have therefore discarded the very doubtful specific name *passerina* in favour of Bonelli's name, about which there can be no doubt.

THE range of the present species is nearly the same as that of the Spectacled Warbler; but it is found also in North-east Africa, where that species does not appear to occur.

It is not known to have occurred in Germany or the northern countries of continental Europe; while in the south of France it is said to be common in some districts of Languedoc and Provence, but is only a summer resident, leaving in the autumn and returning in April. Professor Barboza du Bocage includes it in his list of the birds of Portugal; and Dr. E. Rey states (J. f. O. 1872, p. 148) that it was met with by him everywhere in Algarve, being most numerous at Cape St. Vincent and Villa do Bispo, but everywhere rarer than *S. conspicillata*. It was observed by Mr. Howard Saunders near Murcia, in Spain; and Colonel Irby writes (Orn. Str. Gibr. p. 87) as follows:—"It is not often noticed near Gibraltar; but I shot one on the 20th March, 1870, and at Tangier on the 26th March and 27th April 1874. On the 27th March, 1871, I saw eight or ten among the flowers and trees on the Alameda de Apodaca at Cadiz; they were exceedingly tame, and I watched them for a long time hopping about in and out among the flowers like a common Wren. One or two were very bright-coloured males. I also saw this Warbler on the 25th of April, 1869, in the Coto del Rey. Lord Lilford informs me he found a nest early in May, built in a gum-cistus bush in the Coto del Donaña, the eggs being very hard sat-on."

In Savoy it appears to be tolerably common during the summer. Bailly says that it arrives between the 12th and the 20th April, and is common in uncultivated and rocky localities where there are small thorny bushes, amongst which it places its nest, always close to the ground. It only rears one brood, and leaves Savoy at the end of August. The male leaves off uttering his song-note in the middle of July, when the moult begins. It is extremely fond of the society of the Whitethroat; and their nests are often placed near together.

In Piedmont it is stated to be rare, but appears to be common in Tuscany and Liguria. It is found about the Alban hills, near Rome; and if considered rare in the Neapolitan district, it is probably because it has not been looked for, as it is common in Sicily. Respecting its occurrence in Sardinia, Mr. A. B. Brooke writes (Ibis, 1873, p. 242) as follows:—"I cannot say whether these Warblers remain in Sardinia during the winter. They are moderately common

in summer on the low wooded scrubby hills and along river-banks. They seem to be more partial to trees than most of the other small Warblers, and are extremely shy and difficult to see. I saw young birds flying on the 12th of May."

Lord Lilford met with it in the Ionian Islands, and says (Ibis, 1860, p. 231) that one was picked up by one of his yacht's crew close to the lighthouse of Santa Maura in March 1857, and that he occasionally noticed it in Epirus in February and March. In a note lately received from his Lordship, he writes respecting the present species as follows:—"This is a very local species; besides localities mentioned by me in 'The Ibis,' we met with it in small numbers in March 1875, on the shores of Suda Bay in Crete, where it seemed principally to frequent thick bramble-brakes and bushes of cistus, amongst the olive-groves. It no doubt occurs, although we did not obtain specimens, in Cyprus." Dr. Krüper says that it is generally distributed and not uncommon throughout Greece, occurring in all the bush-covered portions of the bases of the mountains. He met with it breeding on Naxos not uncommonly. It arrives, he says, between the 26th March and the 12th April, according to the season, and breeds late in April or early in May. In 1864 he found five eggs on the 7th May, in 1871 five on the 3rd May, and in 1872 five on the 20th April. Lindermayer states that, according to his experience (extending over a space of twenty years), it arrives in Greece between the 16th and 20th March, and he observed it in August migrating. I have no record of its occurrence in Turkey in Europe or Southern Russia, north of the Black Sea; but in Asia Minor it is, Dr. Krüper informs me, generally distributed and common, and is a summer visitant, arriving late in March. Specimens from Asia Minor in my collection do not in the least differ from those from other localities in Southern Europe; but Dr. Severtzoff assures me that the species from Turkestan, which he says is identical with Ménétries's *Sylvia mystacea* (Cat. rais. p. 34, 1832), is specifically separable from the present species. I have been unable to obtain a specimen from the Araxes or Kúr river (on the banks of which, near Sálían, Ménétries's *S. mystacea* was obtained), and therefore cannot speak from personal observation and comparison; nor does Dr. Severtzoff say if he has examined and compared specimens from the original locality to assure himself that Ménétries's bird and his specimens from Turkestan are specifically identical; but he writes to me as follows:—"I have carefully compared *Sylvia subalpina* with *Sylvia mystacea*, and find that this latter species, though discovered by Ménétries himself, and joined by him with *S. subalpina*, is distinct, differing by its black head, the markings of the tail, and the proportions of the quills. We have in Turkestan only *S. mystacea*."

To return, however, to the present species, I find it recorded from Palestine by Canon Tristram, who says that he shot it on the wooded banks of the Jordan; but Mr. Wyatt did not meet with it in Sinai. It is, however, common in North-east Africa. Captain Shelley says (B. of Egypt, p. 109) that he "first met with this bird towards the end of March near Damietta, where I found it abundant, from which I conclude that it does not winter in Egypt. The low bushes and herbage along the sides of the embankments are the favourite resorts of this lively little Warbler; and there it may be seen constantly on the move, creeping and flitting about amongst the thick shelter, and may be easily recognized at such times by its white outer tail-feathers and diminutive size." Von Heuglin says that it was observed by him in Lower Egypt and Northern Arabia, most frequently in the spring. It arrives, he writes, "between the 18th

and 20th March, and is found singly and in pairs in low bushes on the dunes and in the heaths, in the hedges, and especially in *Arundo* thickets, and is also seen in the barley-fields and amongst the steppe-grass. We never observed it in the denser thickets, tall bushes, or in the trees; but it moves about amongst the bushes like a Willow-Warbler, searching after insects. It seldom goes on to the ground, and leaves its favourite haunts most unwillingly; for its flight is low and weak. Its call-note is a low harsh call, *schäcken*. It only remains in the Delta eight or ten days during passage, and is rarer in the autumn than in the spring. I once observed it at Kordofan on the 10th November." It also inhabits North-western Africa, and is said by Loche to be found throughout Algeria as far as the Sahara; and Favier states that it occurs near Tangier on passage in March and April, and again in October. It inhabits the Canaries, being, Dr. C. Bolle writes (J. f. O. 1857, p. 282), "common all over Canaria on the coasts, even on the hills and plains between Las Palmas and the isthmus of the Guanarteme, and in the country covered with bushes (for instance, in Barranco seco); it is also very common in the south-eastern portion of the island, in the vicinity of Arguineguin." Both Mr. Godman and Dr. Bolle say that it is found in Teneriffe.

In habits the present species much resembles the Spectacled Warbler, being like that bird a frequenter of rough bush-covered localities, and somewhat shy and difficult to shoot. I find but little of interest recorded respecting its habits, beyond what is given above. Von der Mühle says that it creeps through the dense foliage like a Wren, and that one may follow it by its call-note for half an hour without being able to get a shot at it. Dr. Bolle states that its call-note resembles the syllables *err, err*, and that when singing it flutters above the twig on which it has been perched, on to which it again drops when its song is ended.

Its nest is placed in a low dense bush, close to the ground, and is constructed of dried grass-bents, lined with fine roots and sometimes a little plant-cotton.

Eggs of the present species in my collection, obtained by Dr. Th. Krüper, most closely resemble richly coloured and dark-spotted varieties of the Dartford Warbler's eggs, which have the ground-colour white; but one of the eggs has a faint greyish red tinge. In size they are similar to those of the Dartford Warbler.

The specimens figured are the adult male and female above described, and are in my collection.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a, ♂. Olympus, Macedonia, March 9th, 1870 (*Dr. Krüper*). *b*, ♂. Smyrna, May 3rd, 1871. *c*, ♀. Smyrna, June 24th, 1871 (*Dr. Krüper*). *d*, ♂, *e*, ♀. Nile delta, April 1st, 1863 (*S. Stafford Allen*).

E Mus. G. E. Shelley.

a, *b*, ♂. Tangier, March 1873 (*G. E. S.*). *c*, ♀. Delta of the Nile, March 28th, 1871 (*G. E. S.*).

E Mus. Howard Saunders.

a, ♂ *ad.* Near Valencia, Spain, May 2nd (*H. S.*). *b*, ♂, *c*, ♀. Genoese Riviera. *d*, ♂ *ad.* Palermo, May (*Doderlein*).



SPECTACLED WARBLER.
SYLVIA CONSPICILLATA

SYLVIA CONSPICILLATA.

(SPECTACLED WARBLER.)

Sylvia conspicillata, Marm. Mem. Acc. Scienz. Torino, August 1819, fide Temm. Man. d'Orn. i. p. 211 (1820).

Curruca conspicillata (Marm.), Boie, Isis, 1822, p. 552.

Sylvia icterops, Ménétr. Cat. rais. p. 34 (1832).

Sterparola conspicillata (Marm.), Bp. Ucc. Eur. p. 37 (1842).

Stoparola conspicillata (Marm.), Bp. Cat. Parzud. p. 6 (1856).

Alsæcus conspicillata (Marm.), G. R. Gray, Hand-list, p. 212, no. 3007 (1869).

Babillarde à lunettes, French; *Sterpozzola di Sardegna*, Italian; *Ghasfur-el-harrub*, Maltese.

Figuræ notabiles.

Temminck, Pl. Col. 6. fig. 1; Werner, Atlas, *Insectivores*, pl. 44; Gould, B. of Eur. p. 126.

♂ *ad.* pileo et capitis lateribus schistaceis, loris et regione ad basin maxillæ nigris: dorso brunnescenti-cinereo, uropygio et supracaudalibus cinereis: remigibus saturatè fuscis, primariis vix et secundariis conspicuè fulvido marginatis: rectrice extimâ utrinque albâ, rhachi fuscâ, secundâ et tertiâ nigro-fuscis albo apicatis, reliquis nigro-fuscis: mento et gulâ albis, hâc centraliter et gutture cinereis: pectore, hypochondriis et subcaudalibus rufescentibus vix rosaceo tinctis: abdomine centrali albo: rostro corneo, ad basin flavicante: iride fuscâ, marginibus palpebrarum rubris: pedibus flavo-brunneis.

♀ *ad.* mari similis sed corpore suprâ sordidiore: pileo cinereo, plumis brunneo apicatis: capitis lateribus et loris grisescentibus et saturationibus: mento et gulâ albis: corpore reliquo subtùs albedo, pectore et hypochondriis vix rufescente rosaceo lavatis.

Adult Male (Cagliari, April). Crown and sides of the head to below the eye slate-grey, becoming blackish on the lores and at the base of the bill across the forehead; back brownish ash, becoming ashy grey on the rump and upper tail-coverts; quills dark brown, the primaries narrowly and the secondaries and wing-coverts broadly margined with rufous; outer rectrix on each side white with a brown shaft, the rest of the tail blackish brown, the central feathers browner, and the second and third on each side tipped with white; chin and the sides of the upper throat pure white; throat otherwise ashy blue-grey, becoming reddish on the breast; lower breast, flanks, and under tail-coverts pale rufous with a rosy tinge; centre of the abdomen pure white; bill dark horn, yellowish at the base; iris brown, edge of the eyelid red; feet yellowish brown. Total length about 8.25 inches, culmen 0.4, wing 2.25, tail 2.1, tarsus 0.7.

Adult Female (Malta, January). Differs from the male above described in having the upper parts duller, the entire crown pale ashy with brown tips to the feathers, the sides of the head and lores being rather greyer and darker; chin and upper throat pure white, rest of the underparts white slightly washed with pale rosy rufous on the breast and flanks.

Young (Malta, 29th May). Upper parts as in the female, but browner, and without any trace of grey on

the head; the feathers rather loose in texture; secondaries with much broader rufous margins; throat white; rest of the underparts pale rufous buff, palest, almost white, in the centre of the abdomen; the tail not fully grown and with rufous edgings to the feathers.

THE present species, one which in many respects reminds one so much of our common Lesser Whitethroat, inhabits Southern Europe and North Africa, being found as far east as the frontiers of Persia, and as far west as the Canaries, Madeira, and the Cape-Verd Islands. It has not been met with in Great Britain, nor yet in Scandinavia, North or Central Russia, Germany, or the north of France, but is found in the southern provinces of this last country; and Messrs. Jaubert and Barthélemy-Lapommeraye state that it is tolerably common in Provence in August and September, but is of rare occurrence in the spring, when it is met with only in the arid and scrub-covered districts of the Boue and the Crau. It is said by Professor Barboza du Bocage to be rare in Portugal; but Dr. E. Rey states (J. f. O. 1872, p. 148) that it is common in Algarve, where he found it breeding. In Spain it is also found during the breeding-season. Colonel Irby says (Orn. Str. Gibr. p. 87) that the earliest date on which he obtained it near Gibraltar was on the 10th March, and that it remains there during the nesting-season. It is, he says, "a conspicuous scrub-hunting bird, frequenting dry and more open ground than the Whitethroat, being seen amongst cactus bushes. A sure place for finding them is in the Carteian Hills." It is found in Savoy, but is, Bailly states, very rare, and only a few nest about the rocky scrub-covered foot of the Mont du Chat and similar localities. It arrives there about the end of April, and leaves again in August. In Italy it has been recorded from Liguria, the vicinity of Rome and of Cività Vecchia; and when the country is properly explored it will, Salvadori thinks, be found along the whole of the Mediterranean coast. In Sicily and Sardinia, however, it is common. Mr. A. B. Brooke remarks that, though very common in all the uncultivated portions of the plains in the latter island, he never observed it in the hills; and Mr. C. A. Wright states that it is common in Malta, where it is the only resident Warbler. It inhabits Greece, where, Dr. Krüper says, it is rare, and he himself never met with it. It is said to be common on Corfu during the summer; and Erhardt states that it is found on the Cyclades at that season. I have never received it in the collections from Turkey, where it therefore is either very rare or does not occur. In Palestine it is a resident; and Canon Tristram, who obtained it there, writes (Ibis, 1867, p. 84) as follows:—"On the bare highlands of the wilderness of Judæa, and on the desolate plains of Jordan, a few individuals of *S. conspicillata* might constantly be seen flitting briskly from one little tuft of salsola to another, and, as in Malta and the Sahara, permanent residents." It was met with by Ménétries in the mountains of Talish on the Persian frontier; and Mr. Blanford thinks that it may probably be met with in the Caspian provinces of Persia; but it has not been recorded from any locality further east.

It has not been met with, so far as I can ascertain, in North-east Africa, but is common on the north-western side of that continent. Loche says that though nowhere very numerous it is found throughout the three provinces of Algeria. Canon Tristram speaks of it as being the common and characteristic Warbler of the whole Sahara; and Mr. O. Salvin writes (Ibis, 1859, p. 305) that it is "a true inhabitant of the Salt-Lake districts, where it is found abundantly, frequenting the low shrubs that cover the uncultivated portions of that region. It is a shy and wary bird, and carefully eludes observation by skulking from bush to bush as one approaches."

Mr. C. F. Tyrwhitt-Drake records it from Tangier and Eastern Morocco, and says that he shot it in the salt marshes at Martine in March; and Favier states (*fide* Irby, *l. c.*) that it is not common about Tangier, and only seen on passage north in March. Dr. Dohrn, who met with it on the Cape-Verd Islands, says that it is there common, both in the valleys and on the hills; and it has been recorded from Madeira by Vernon-Harcourt, and from the Canaries by Mr. F. DuCane Godman. This latter gentleman writes (*Ibis*, 1872, p. 175) that "it is not unfrequently to be seen in the neighbourhood of Orotava, where it frequents thick bushes, into which it plunges at the approach of danger. I saw it also near the Paul da Serra, in Madeira."

In habits the present species appears to have much in common with the Common and Lesser Whitethroats. It is essentially a bush-frequenting species, and affects arid uncultivated tracts which are covered with scrubby bushes. Dr. Rey, who says that it closely resembles the White-throat in its habits, adds that it climbs to the top of a bush and will break out into song, fluttering in the air whilst singing, and then directly it drops into the bush again it disappears down amongst the low brushwood; and Mr. A. B. Brooke, who found it common in Sardinia, writes (*Ibis*, 1873, p. 241) as follows:—"It is, I think, the most shy of all the Warblers. During the months of April and May the cock bird may generally be seen perched on the highest twig of cistus forty or fifty yards off; but the moment one tries to approach any nearer, it flies off low over the ground, lighting again in a similar situation; and this is repeated time after time in the most tantalizing manner. I do not think all, if any, of these Warblers migrate in winter, as I have seen as many early in March as at any other time of the year. Excepting during the spring, they are very hard to see, always keeping in thick cover; and unless come upon unawares, they creep away through the twigs, close along the ground, without showing themselves. The young birds are able to fly by the middle of May; they have much broader rufous edgings to the feathers than the old birds. Their song is short and pleasant; and the cocks often sing flying up in the air, returning and lighting again in the same spot—a habit so characteristic of the common Whitethroat, to which species this bird appears to bear a remarkable resemblance both in coloration and habits." Canon Tristram, however, appears to have found it far less wild and shy than Mr. Brooke; for, writing on its habits as observed by him in Algeria, he says that, "affecting no concealment, it hops in front of its pursuer from bush to bush, searching for small beetles among the roots of each. More than one or two are never seen together; but it is impossible to ride far without detecting it." Mr. C. A. Wright also gives some excellent notes on its habits as observed by him at Malta, which I transcribe (*Ibis*, 1864, p. 68) as follows:—"It is partial to dry stony places, and selects for its nest low coarse under-shrubs, such as *Inula viscosa* and *Euphorbia dendroides*, which flourish in wild rocky situations. During the time of nidification its vigorous and pleasing song is heard for a considerable distance around, delivered from the topmost branch of a tree, or the apex of a stone, in the vicinity of its nest, over which it sometimes hovers and sings in the manner of the Blue Thrush. It has another note, somewhat like that of *S. melanocephala*, but less powerful. It is an early breeder, laying four or five eggs, and, I should think, produces two broods in the season, as I have found nests with young in May and June as well as in March. In fine weather it commences singing as early as January. It appears very excited on any one approaching its nest, from which it never wanders far. A favourite place for it is the Soldiers' Cemetery at Floriana, before alluded

to, where a search for it will seldom prove unsuccessful. It delights in flitting from tombstone to tombstone or amongst the undershrubs and few trees to be found there. It will allow itself to be watched very closely, and reward the observer with strains of music which, if not of a high order, strike pleasantly on the ear in an island not much favoured by the song of birds."

The nest of the Spectacled Warbler, a somewhat loose but neat structure of dry grass with a scanty lining of horsehair, is placed in a bush, usually not high above the ground; and Canon Tristram says that he found many nests placed about a foot from the ground in the centre of small low bushes in the plains north of Biskra. This gentleman describes the nest as being "deep and very artistically constructed," and adds that four or five eggs are deposited; but Mr. Salvin states that they seldom exceed four. Eggs in my collection, obtained by Mr. Salvin at Ain Djendeli, in Algeria, are pale greenish grey, so minutely freckled with greenish brown as almost to appear uniform in colour; one specimen, however, is rather more boldly spotted or blurred with greenish brown. I may best describe them by comparing them to the eggs of the common Whitethroat; but they are much smaller, measuring only $\frac{5.1}{80}$ by $\frac{3.9}{80}$ inch.

The specimens figured are an adult male from Cagliari, and a female from Malta, these being those described.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a, ♂. Southern France (*Verreaux*). *b*, ♂. Algarve, Portugal, April 1869 (*Dr. E. Rey*). *c*, ♂. Near Cagliari, April 1863 (*Salvadori*). *d*, ♂, *e*, ♀. Malta, January 1863, and December 1862 (*C. A. Wright*). *f*. St. Vincent, Cape-Verd Islands (*Keulemans*).

E Mus. C. A. Wright.

a, ♂. May 1869. *b*, *juv.* May 29th, 1869. *c*, ♂. February 1870. *d*, *e*, *f*, ♂. May 1870. *g*, ♀. June 1869. *h*, *i*, *j*, ♂, *k*, *l*, ♀. May 1874. All from Malta (*C. A. W.*)

E Mus. Howard Saunders.

a, ♂, *b*, ♀. Portugal, April (*Dr. Rey*). *c*, *d*, ♂ *juv.* Malaga, September 20th. *e*, ♂. Sardinia, April (*Salvadori*). *f*, ♂. Malta, April (*C. A. Wright*).

SYLVIA DESERTICOLA.

(TRISTRAM'S WARBLER.)

Sylvia deserticola, Tristram, Ibis, 1859, p. 58.*Sylvia nana*, Heugl. Orn. N.O.-Afr. i. p. 306 (1869, partim).*Figura nulla.*

♂ *ad.* rufescenti-fuscus, interscapulio et marginibus alarum nigricantium latis castaneis: ciliis oculorum albis: subtùs cinnamomescenti-albus, lateraliter magis rufescens: caudâ fusco-nigrâ, rectricis extimæ pogonio externo et pogonii interni parte apicali albis, rectrice secundâ albo angustè terminatâ: mandibulâ superiore pallidè fuscâ, inferiore citrinâ: pedibus pallidè citrinis: iridibus flavissimis.

♀ *ad.* omninò pallidior, interscapulio dorso concolori, et corpore subtùs magis albo.

Adult Male (Wed Nca, Algeria). In general appearance resembling *Sylvia conspicillata*; but the underparts are pale cinnamon, and the chin and throat, instead of being white as in *Sylvia conspicillata*, are pale cinnamon with a rufous tinge, and the lores and space below and slightly behind the eye, instead of being blackish, are plumbeous; wing and tail as in *Sylvia conspicillata*, but the tail, as a rule, rather longer; bill brown, the lower mandible yellowish; iris rich yellow; legs pale yellowish. Total length about 4·5 inches, culmen 0·47, wing 2·1, tail 2·0, tarsus 0·75.

Adult Female (Algeria, 23rd December, 1856). Differs from the female of *Sylvia conspicillata* in having the underparts pale cinnamon, and the throat the same colour, and not white.

THIS beautiful little Warbler, which, so far as I can ascertain, inhabits only the desert portions of Algeria, has by some authors been confused with the Desert-Warbler (*Sylvia nana*), from which it is very clearly distinct, approaching much more closely to the Spectacled Warbler, of which it appears to be a local form, though sufficiently distinct to be worthy of specific rank. It was first discovered by Canon Tristram, who says (Ibis, 1859, p. 417) that "it is found only in the southern portion of the desert, where it seems partially to take the place of the Spectacled Warbler. I have seen it in localities where I should not have expected to find its congener, on the great plains where there were no shrubs or plants. It differs from the former in the colour of the top of the head, which is rufous instead of ash-colour, and in the throat, neck, breast, and belly, which are of a uniform pale sand-colour, while the Spectacled, besides its whiter chin and dark throat, has a rich vinous tint down the whole of its flanks. Similar as the two birds are in winter dress, I can feel no hesitation as to the distinctness of these species, having frequently obtained both in neighbouring or the same localities at the same time of the year. I was unfortunately unable to visit the haunts of *Sylvia deserticola* in the breeding-season."

Beyond the above particulars I find no data on record respecting this Warbler, which is still a very rare species in collections, and of which I have not been able to procure a single skin.

Dr. Sclater suggests (Ibis, 1859, p. 417, footnote) that Loche's *Stoparola deserti* (Rev. Zool.

1858, p. 394, pl. 11. fig. 1) is Tristram's Warbler; but in this view I cannot concur, as Loche both describes and figures his bird as being a pale sandy isabelline bird with the underparts pure white. Canon Tristram states that *Sylvia deserticola* has the crown and upper parts more rufous than *Sylvia conspicillata*; but this is not constant; for in one specimen these parts are quite as ashy in tinge as in any Spectacled Warbler in my collection. Nor does it seem to me that the wing is rounder than *Sylvia conspicillata*, as stated by Mr. Seebohm (Ibis, 1879, p. 316); for I have examined examples of *Sylvia conspicillata* which have the wings quite as rounded as in any of the three specimens of *Sylvia deserticola* now before me.

As this species is so close to *Sylvia conspicillata*, but may always be distinguished by having the throat rufescent cinnamon instead of white, and in lacking the grey on the lower throat, I have decided not to figure it.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. B. Tristram.

a, ♂ *ad.* Wed Nca, Algeria, December 15th, 1856. *b*, ♂. Oued Soudan, Algeria, November 29th, 1856 (*H. B. T.*, types of the species).

E Mus. H. Seebohm.

a, ♀. Desert between Hadjira and Blad el Omer, Algeria, December 23rd, 1856 (*H. B. Tristram*).



PALESTINE WARBLER
Sylvia melanothorax

SYLVIA MELANOTHORAX.

(PALESTINE WARBLER.)

Sylvia melanothorax, Tristram, Ibis, 1872, p. 296.*Figura nulla.*

♂ *ad.* capite et corpore suprâ ut in *Sylvia melanocephala* picturatis, sed hâc paullo saturatiore: remigibus nigricantibus, in pogonio externo vix albido marginatis: tectricibus alarum nigris albo marginatis: caudâ ut in *S. melanocephala*: gulâ, gutture et pectore nigris, plumis omnibus albo apicatis: corpore imo subtùs cinereo: rostro brunneo, ad basin pallidiore: iride flavâ: pedibus pallidè brunneis.

♀ *ad.* fœminæ *Sylvia melanocephala* similis, sed pilei plumis ad basin nigricantibus et gutture cum pectore superiore nigro notatis.

Adult Male (Engedi, 2nd February). Upper parts as in *Sylvia melanocephala*, the crown, nape, and sides of the head being glossy black, and the back dark slate-grey, but the back in the present species is, if any thing, a trifle darker than in *S. melanocephala*; quills darker than in that species, being black, narrowly edged with white on the outer web; wing-coverts black, margined with white; tail similarly coloured to that of *S. melanocephala*; underparts ashy grey, except the throat and breast, which are jet-black, tipped with greyish white, these tips to some extent concealing the black bases of the feathers; bill dark brown, lighter at the base; legs light brown; iris dark yellow. Total length about 4.75 inches, culmen 0.55, wing 2.35, tail 2.42, tarsus 0.75. First primary about 0.2 inch longer than the primary coverts, 1.2 shorter than the second, which latter is a trifle shorter than the third, third a trifle less than the fourth, which is the longest.

Adult Female (Engedi, 2nd February). Upper parts as in the female of *S. melanocephala*, but there are signs of the head becoming blackish; underparts white, on the flanks and abdomen washed with brownish, throat and upper breast marked with black spots. Culmen 0.5, wing 2.3, tail 2.4, tarsus 0.71.

THE present species is certainly one of the least-known of the Warblers which I shall have to include in the present work; for nothing is known respecting it, except what was published by Canon Tristram, who first discovered and described it. This gentleman writes (*l. c.*) as follows:—"When searching among the trees and shrubs at Engedi, where birds are generally plentiful, I noticed consorting with the Black-headed Warbler (*Sylvia melanocephala*) a pair of another species; and after a long pursuit I succeeded in obtaining both male and female. My attention was first directed to them by the note, which differs most markedly from that of *S. melanocephala*." No other traveller in the Holy Land appears to have met with this rare species, and I have been unable to gain any further information respecting it. Nor, so far as I can ascertain, does a specimen exist in any collection, except the pair shot by Canon Tristram, to whom I am indebted for the loan of them. It is to be hoped that ornithologists who visit the part of the

country where the present species has been met with, will use their best endeavours to obtain further information respecting it; and I trust that before the present work is completed I may be able to publish some additional notes on this most interesting species; it is with a view to obtain such that I issue the Plate with what little information I have. In describing the above specimens Canon Tristram says that the "throat and breast are black instead of white;" but he omits to name the very distinct greyish white edgings to the feathers, which, indeed, almost obscure the black colour; but doubtless this is only the winter plumage, and I think it very probable that, in the summer dress, these white edgings entirely disappear, and the throat and breast become quite black.

Although tolerably closely allied to *Sylvia melanocephala*, still the present species is very clearly distinct from that bird; for not only are the upper parts somewhat darker and the abdomen much greyer, but the black coloration of the throat and breast is a very distinctive character in both sexes. Canon Tristram lays some stress on the fact that the iris is yellow; but this I do not consider a characteristic difference between it and *S. melanocephala*, as this latter species sometimes has a yellow and sometimes a reddish or orange-red iris.

As yet nothing whatever is known respecting the nidification or habits of the present species; nor, as above stated, has it been yet obtained in full summer plumage.

The two examples figured and described are the types of the species, and have been kindly lent to me by Canon Tristram, to whom they belong. They were both shot by himself at Engedi on the 2nd February, 1872.



SARDINIAN WARBLER.
SYLVIA MELANOCEPHALA

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SYLVIA MELANOCEPHALA.

(SARDINIAN WARBLER.)

- Motacilla melanocephala*, Gm. Syst. Nat. i. p. 970 (1788).
Sylvia melanocephala (Gm.), Lath. Ind. Orn. ii. p. 509 (1790).
Sylvia ruscicola, Vieill. N. Dict. xi. p. 186 (1817).
Curruca melanocephala (Gm.), Boie, Isis, 1822, p. 553.
Curruca momus, Ehr. Symb. Phys. Av. i. fol. 66 (1829).
Pyrophthalma melanocephala (Gm.), Bp. Ucc. Eur. p. 37 (1842).
Sylvia ochrogenion, Linderm. Isis, 1843, p. 343.
Melizophilus melanocephalus (Gm.), Cab. Mus. Hein. i. p. 35. no. 230 (1850).
Melizophilus nigricapillus, Cab. tom. cit. p. 35. no. 231 (1850).
Curruca luctuosa, C. L. Brehm, Vogelfang, p. 229 (1855).
 ? *Curruca leucopogon*, C. L. Brehm, tom. cit. p. 229 (1855, nec Meyer).
Motacilla leucogastra, Ledru, fide Bolle, Journ. für Orn. 1857, p. 282.
Dumeticola melanocephala (Gm.), A. von Homeyer, Journ. für Orn. 1862, p. 277.
Sylvia bowmani, Tristram, Ibis, 1867, p. 85.
Sylvia melanocephala minor, Heugl. Orn. N.O.-Afr. p. 303 (1869-71).
Babillarde mélanocephale, French; *Tutinegra dos vallados*, Portuguese; *Capellanet*, Spanish;
Capirote de ojos incarnados, in the Canaries; *Occhio-rosso*, Italian; *Slavka chernogolovaya*,
 Russian.

Figuræ notabiles.

Werner, Atlas, *Insectivores*, pl. 39; Fritsch, Vög. Eur. taf. 21. fig. 3; Gould, B. of Eur. p. 129; Roux, Orn. Prov. pl. 210. fig. 1.

♂ *ad.* pileo, capitis lateribus et nuchâ intensè nigris: dorso, uropygio et supracaudalibus saturatè cærulescenti-schistaceis: remigibus nigricantibus, in pogonio externo vix schistaceo marginatis, tectricibus alarum magis eodem colore marginatis et apicatis: caudâ nigrâ, rectrice extimâ in pogonio externo et ad apicem albâ, duabus sequentibus inconspicuè albo apicatis: gulâ albâ: pectore albo: canescenti-schistaceo lavato: abdomine centrali albo: hypochondriis, subalaribus et subcaudalibus grisescenti-schistaceis: rostro brunnescenti-corneo ad basin, mandibulâ sordidè flavo: iride tum rufescente, tum flavâ: marginibus palpebrarum sordidè miniatis: pedibus brunneis.

♀ *ad.* corpore suprâ saturatè grisescenti-brunneo, pileo et nuchâ vix schistaceo tinctis: alis et caudâ ut in mare coloratis, sed fuscесcentioribus, rectricibus extimis brunnescenti-albido nec albo notatis: gulâ et abdomine centrali albis: pectore, hypochondriis, subcaudalibus et subalaribus brunnescenti-griseis: rostro, pedibus et iride ut in mare coloratis.

Adult Male (Guiken, Asia Minor, 24th March). Crown, sides of the head, including the auriculars, and nape jet-black, back, rump, and upper tail-coverts very dark slaty blue-grey, quills dull blackish,

narrowly edged on the outer web with dark slate-blue, wing-coverts more broadly margined with that colour; tail rounded, black, the outer feather on each side with the terminal portion and the outer web white, the next in order broadly tipped with white, and the third similarly but more narrowly tipped; throat pure white, breast white, washed with blue-grey, centre of the abdomen white; flanks, under wing-coverts, and under tail-coverts blue-grey; bill brownish horn, dull yellowish at the base of the lower mandible; iris red, with an orange tinge, the edge of the eyelids brick-red; legs dark brown. Total length about 4·7 inches, culmen 0·52, gape 0·55, wing 2·15, tail 2·35, tarsus 0·82, first primary short, 0·95 less than the second, which is 0·18 less than the third, third and fourth nearly equal, the third being, if any thing, the longest.

Adult Female (Guiken, 24th March). Upper parts dark greyish brown, the crown and nape tinged with blue-grey; quills and wing-coverts blackish brown, margined with dull dark greyish brown; tail blackish brown, with rather lighter margins, the outer tail-feather with a narrow dirty white edging to the outer web, and tipped with dull brownish white; throat and centre of the abdomen white; rest of the underparts dull greyish brown; soft parts as in the male, and the edge of the eyelids also red, but duller in colour.

Nestling (Sardinia). Upper parts dull brownish, darker on the head; underparts white, washed with brownish buff; throat white; quills dark brown, edged with dull greyish brown.

Obs. I do not find any difference between the plumage worn in summer and the winter dress, as specimens obtained in September, December, and January are just as brightly coloured as those shot in March and April.

I am indebted to Canon Tristram for the loan of his type of *Sylvia bowmani*, which I am quite unable to separate from the present species. Canon Tristram writes to me that he is quite convinced that it is distinct, as the iris is yellow, and the note differs from that of *Sylvia melanocephala*; but against this view I may remark that it is quite impossible to distinguish a species by its note only, as many birds vary their song not a little; and as regards the colour of the iris, I have specimens of *Sylvia melanocephala*, collected by Dr. Krüper, on the labels of which he has written that the iris is bright yellow. Whether this difference in the coloration of the iris is owing to age or not I cannot say; but there is no doubt that the colour of the iris varies in both sexes, being either bright chestnut-red, orange, or yellow. Von Heuglin also remarks this difference in the coloration of the iris, and says, in describing this bird from North-east Africa, "iride tum helvola, tum lateritia." Compared with specimens of *Sylvia melanocephala* from Sardinia, Spain, and Turkey, I find it utterly impossible to distinguish the type of *Sylvia bowmani*; and were the labels removed, I should be unable to pick it out from amongst the series. As the reddish-coloured iris appears to be more common than the yellow, I have figured specimens with the iris reddish. *Sylvia melanothorax*, Tristram (Ibis, 1872, p. 296), of which the types are before me, appears, however, to be a good species, differing from *Sylvia melanocephala* in having the throat and breast black, all the feathers being tolerably broadly tipped with white, not pure black in either sex; and the abdomen is much darker than in that species. After measuring my entire series, I cannot discover any constant difference in size between examples from Sardinia, Malta, and Asia Minor, though, as a rule, eastern specimens are, if any thing, a trifle smaller than those from Western Europe.

THIS little Warbler, somewhat resembling a miniature Blackcap, inhabits Southern Europe and North Africa, being in most localities a resident, though in some, as in Asia Minor, it is a migrant. It is common in Southern France, and breeds numerously in Provence, being, according

to Baron von Müller (J. f. O. 1856, p. 224), common near Marseilles, where it breeds in the gardens, and is a resident. In Portugal it is stated by Professor Barboza du Bocage to be a common species; and Dr. E. Rey (J. f. O. 1872, p. 149) speaks of it as being "rather rare at Algarve, but very common in Estremadura." In Spain it is extremely numerous; and Lord Lilford writes to me:—"It is very common in almost all parts of the Mediterranean that I have visited, preeminently so in Southern Spain, especially in the gardens at Gibraltar, Sardinia, Provence, all over Sicily, near Tunis, in Corfu, Santa Maura, Ithaca, Cephalonia, and in the provinces of Epirus and Acarnania. In all these localities I believe it to be a permanent resident. It breeds in May; at least that is the month in which I have generally found the nests; but I have heard of it breeding much earlier." It is an abundant and conspicuous species near Gibraltar, and is one of the few Warblers which nest on the rock. Mr. Howard Saunders informs me that "it is common and resident along the rough and broken ground of the littoral provinces;" but he did not observe it further inland than Cordova. Dr. A. E. Brehm (Allg. deutsche naturh. Zeit. iii. p. 465) states that he found it exceedingly common in Catalonia, and in December shot specimens at Granada, but only males, and he believes that the females leave during the winter, whilst the males remain. Mr. A. von Homeyer met with it in the Balearic islands, where, he says (*l. c.*), it is one of the characteristic species, and is found everywhere, even on the small islands, though most numerous on Mallorca. In Italy it is found from Liguria southwards into Sicily, but has not as yet been recorded from Piedmont. Savi remarks that it is rarely found at any great distance from the sea-coast. In Sardinia it is, according to Mr. A. B. Brooke, common, and resident, being numerous both on the hills and in the plains; and in Sicily it is said by Malherbe to be sedentary and numerous. Mr. C. A. Wright, who (*Ibis*, 1864, p. 69) records it from Malta, says:—"It generally appears in the winter months, which has given rise to another local name by which it is also known, *Ghasfur tal Maltemp*, or 'the bird of bad weather.' It is never very numerous, and in some years is not often met with. The locality mentioned as a good one for the *S. passerina* and *S. conspicillata* is also a favourite resort of the Sardinian Warbler. When disturbed it flits along the ground in a slinking manner to the nearest bush, into which it enters so rapidly that it is difficult to catch more than a glimpse of its outspread tail before it disappears from view; and if the bush furnishes a good hiding-place, it will not readily move out again. Its characteristic note is powerful and harsh, resembling the winding of a clock; it has also another note, '*chuck, chuck, chuck.*' It is not unfrequently seen amongst thickets of cactus, with which this island abounds; and it is also partial to gardens. I have never known it breed here."

It appears, however, highly probable that this species does sometimes breed at Malta, as Captain H. W. Feilden writes to me from there as follows:—"Hitherto this Warbler has only been recorded as a winter visitant to these islands; but I have little doubt that it remained to breed here this last year (1874), as I saw them as late as the middle of May. On the 9th of that month I noticed a pair frequenting a thicket at the head of St. Julian's Valley, but failed to discover the nest. I killed the male, which, from the enlarged state of the testes, was evidently breeding. Again, on the 13th of the same month I noticed two other couples in different parts of the island. During the winter months it is sparingly diffused throughout the island, but seemingly always in pairs." In Greece it is resident, and tolerably numerous.

Von der Mühle speaks of it as being very common in bush-covered localities near the sea-shore; and Lindermayer says that it inhabits the dry bush-covered portions of the mountains, as also the dry river-beds, in which latter localities it is usually found in company with the Subalpine Warbler. In Southern Germany it has been met with in the coastal districts; and the Ritter von Tschusi-Schmidhofen informs me that it has been observed near Trieste during the autumn migration, and that A. E. Brehm met with it near Pola. Professor von Nordmann says that it is found along the banks of the Danube in Bessarabia; and I have several specimens obtained not far from Constantinople. According to Herr Goebel (*J. f. O.* 1870, p. 451) it breeds in the Uman district, in Southern Russia, but is one of the rarest species found there. It is, he says, found in the Government of Kieff, and there is a specimen in the Kieff Museum. It occurs in Asia Minor, and, according to Dr. Th. Krüper (*J. f. O.* 1869, p. 37), is found everywhere near Smyrna in winter, but on the approach of spring they all disappear, and he never saw any during the summer. In Palestine, however, according to Canon Tristram it is resident and generally distributed; and Mr. Wyatt met with it in the oasis of Feirán, in the Sinaitic peninsula, where it frequents the tamarisks. In North-east Africa it is common. Captain Shelley says (*B. of Egypt*, p. 107) that it is abundant throughout Egypt and Nubia, and more especially so on the islands of the First Cataract. Von Heuglin says (*l. c.*) that he met with it, in North-east Africa, only during migration, during the autumn and winter, and usually in pairs; he observed it in Arabia Petræa, Egypt, Nubia, the Baiuda and Bischarin deserts, and at Aden in December; and Mr. Blanford obtained it in Abyssinia, where he says he shot a single specimen at Rairo, in Habab. In North-western Africa it is common during the winter season, and, according to Mr. Taczanowski (*J. f. O.* 1871, p. 61), is very numerous in Algeria, where it is found near the sea-shore as well as in the desert. Mr. J. H. Gurney, jun., informs me that he found it common in the Algerian Atlas in winter. Mr. Tyrwhitt-Drake records it as very numerous in Tangier and Eastern Morocco; and Lord Lilford met with it at Tunis. It inhabits the Canaries. Mr. Godman met with it at Palma and in Gran Canary; and Webb and Berthelot found it at Teneriffe. Dr. Carl Bolle says (*J. f. O.* 1857, p. 282) that he did not find it common in Teneriffe, and never saw it in Canaria, though it certainly occurs there. It is said to inhabit the island of Ferro; but he does not believe that it has ever occurred at Madeira.

In its habits the Sardinian Warbler is exceedingly restless and active, more so almost than any of its allies. It is shy and retiring, the female, however, much more so than the male, and at the least approach of danger drops down into the thick undergrowth, where it is difficult to see as it creeps through the boughs with great facility and speed. It frequents very dry arid localities, according to Colonel Irby living in Southern Spain during the hot season in places where there is scarcely any water, and appears to require very little, if any, water. Mr. Howard Saunders informs me that, as far as his experience goes, "its favourite haunts are the wild bush-covered plains and open ravines at the foot of the mountains; but it does not ascend these latter," nor did he ever observe it in the moister and more cultivated districts. Dr. E. Rey (*l. c.*) refers especially to the great shyness of the females, and says that out of sixteen specimens he shot at Barreiro, in Portugal, only one was a female, though in every instance he found a male and a female together: he found them most numerous in the hedges bordering the fields, which

consist of *Opuntia vulgaris*, *Agave americana*, and *Lycium barbarum*; and all the nests he met with were in evergreen-oak bushes, which grow in the hedges with olive and laurels. Captain Feilden informs me that in Malta "it frequently alights on the bare fig-trees, but if alarmed darts into the thickets of prickly pear, uttering its harsh clicking note; its love-song is a low, rather melodious warble. On the 24th February," he says, "I was attracted to a male of this species, perched on the bare bough of a fig-tree. It was warbling sweetly, and so intent on the object of its affections, who was hopping about below him, that no notice was taken of my approach until I was within a few feet of him." In a letter just received from Mr. J. H. Gurney, jun., he informs me that he observed that it does not appear to eat its prey where it has caught it, nor to clean its bill or preen its feathers where it has enjoyed its repast. Like its allies it is insectivorous, feeding chiefly on small insects of various kinds, which it picks up off the ground or else collects amongst the bushes; and Colonel Irby says that it is partial to figs, grapes, &c., and in winter eats the seeds of the "pepper-tree" of Gibraltar. According to Von der Mühle it breeds twice, or occasionally three times in the year, its nest being placed in a bush or in a low branch, always near the ground. Colonel Irby writes from Gibraltar (*l. c.*) as follows:—"I have had several nests in my garden, the earliest date on which an egg was laid being the 12th of March. The number of eggs varies from three to five; the nest is very slight, formed of grass, and sometimes cotton-threads, is lined with hair, and always placed in some thick bush about two or three feet from the ground. The male sits as well as the female. In habits this bird much resembles the Blackcap, but is more obtrusive; and its song is to be heard at all seasons." Lord Lilford informs me that "it is a bold, active little bird, constantly on the move, has a harsh grating chide when disturbed or alarmed, and utters a low warbling song when at peace. The nest is generally easy to find, placed at a short distance, three or four feet from the ground, sometimes in a dense evergreen bush (for which sort of growth this species has a remarkable partiality), and often in a comparatively open bush with hardly any attempt at concealment. The eggs are from four to six in number." Mr. J. H. Gurney, jun., writes (*Ibis*, 1871, p. 84), it "manifests great alarm when it has not even finished building its nest. The female, with trailing wings, utters incessantly a low but angry note within two feet of the intruder; while the male (hardly opening his wings) leaps from twig to twig, making the small boughs shake, and in the extremity of his resentment essays to erect a few small feathers in imitation of a crest. They fly with their tails spread, but close them on alighting. Some females are darker than others, especially about the head. I shot a male with a few white feathers appearing in the crown." I have two nests of this Warbler—one taken on the 30th of April, and the other on the 12th of June, near Malaga, in Spain. The nest is a rather neat and compact cup-shaped structure, built of fine grass-bents and tender rootlets, the inside cup being lined with fine roots and a few hairs; and here and there small particles of a cottony substance are interwoven in the outside walls.

The eggs of this Warbler are subject to no little variation; but, judging from several clutches I possess and have seen from Spain and Sardinia, there seem to be two tolerably constant forms, of both of which I possess eggs in my collection. The first of these closely resemble the eggs of the common Whitethroat, but, as a rule, the markings are somewhat clearer and darker; the second differ greatly from these, being white with a few pale violet-grey underlying shell-

markings, and are spotted with dark red, the spots being much larger and closer at the larger end, in one specimen almost confluent. In size they average about $\frac{2.8}{4.0}$ by $\frac{2.2}{4.0}$ inch. So far as I can judge, the former variety, resembling those of the Whitethroat, is the commoner, and Von der Mühle appears only to have obtained eggs thus coloured; but Von Homeyer remarks (*l. c.*) that he found two distinct varieties of eggs, one of which he describes as coloured like Jays' eggs, and the others like those of the Lesser Whitethroat. Mr. Howard Saunders writes to me:—"The eggs are subject to most extraordinary and puzzling variations. For fear that there might possibly be a mistake if the parent birds were shot, I made my collectors lime the birds on every nest in spite of the injury to the plumage. In a series of carefully identified clutches of the eggs of this species some are of a creamy white, handsomely blotched with sandy brown, similar to a well-marked Robin's, others are thickly freckled with reddish, after the style of the Grasshopper Warbler's, another variety is dull greenish brown, like a Sedge-Warbler's, and yet a fourth and not uncommon variety is undistinguishable from pale examples of the common Whitethroat. As the parent birds were snared on all these nests, there can be no possibility of any mistake as to parentage."

The specimens figured are those described, being an adult male and female, and are in my collection.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a, ♂. Sardinia (*Dr. Kutter*). *b*, ♂, *c*, ♂, *d*, ♀. Sardinia, April 1870 (*Salvadori*). *e*. Malta, January 1863. *f*, ♂. Malta, December 1862 (*Cooke*). *g*, ♂, *h*, ♂, *i*, ♂, *k*, ♂. Maslak, Turkey, October 1871 (*Robson*). *l*, ♂, *m*, ♂, *n*, ♀. Guikin, Asia Minor, March 24th, 1869. *o*, ♀, *p*, ♂. Smyrna, Asia Minor, March 9th, 1871 (*Dr. Krüper*). *q*, ♀. Cairo, January 30th, 1863 (*S. S. Allen*). *r*. Spain, December 30th (*Irby*). *s*, *juv.* Sardinia (*Dr. Kutter*).

E. Mus. Howard Saunders.

a, ♂. Hérault, South France, April. *b*, ♀. Cordova, Spain, March 21st, 1868 (*H. S.*). *c*, ♀. Malaga, June 18th, from nest. *d*, ♀. Malaga, July 8th, from nest. *e*, ♀ *juv.* Malaga, July 24th. *f*, ♀, *g*, *juv.* Malaga, September 24th. *h*, ♂. Malaga, November 22nd. *i*, ♂. Seville, December 1st (*H. S.*).

E Mus. Harvie-Brown and Fielden.

a, ♂. Malta, May 9th, 1874. *b*, ♂, *c*, ♂. Malta, November 26th, 1873. *d*, ♀. Malta, December 24th, 1873 (*H. W. Feilden*).

E Mus. H. B. Tristram.

a, ♀. Algiers, December 1855. *b*, ♂. Algiers, January 10th, 1856. *c*, ♀, *d*, ♂. Algiers, March 7th, 1856. *e*, ♂. Smyrna, November 9th, 1863. *f*. Plain of Acre, April 21st, 1864. *g*, ♀. Engedi, January 22nd, 1864. *h*, ♀. Palestine, January 25th, 1864. *i*, ♂. Palestine, January 30th, 1864. *k*, ♂. Palestine, January 30th, 1864. *l*, ♂ (type of *Sylvia bowmani*). Jericho, January 2nd, 1864 (*H. B. T.*).



BOWMAN'S WARBLER.
SYLVIA MOMUS

SYLVIA MOMUS.

(BOWMAN'S WARBLER.)

Curruca momus, Ehr. Symb. Phys. Aves, i. fol. 66 (1829).? *Curruca thebaica*, Ehr. ut suprâ (1829).*Sylvia mystacea*, Ménétr. Cat. Rais. p. 34 (1832).*Melizophilus nigricapillus*, Cab. Mus. Hein. i. p. 35 (1850-51).*Sylvia bowmani*, Tristram, Ibis, 1867, p. 85.*Sylvia nigricapilla* (Cab.), Gray, Hand-l. of B. i. p. 212. no. 3005 (1869).*Sylvia melanocephala minor*, v. Heugl. Orn. N.O.-Afr. i. p. 303 (1869, partim).*Sylvia rubescens*, Blanf. Ibis, 1874, p. 77.*Pyrophthalma mystacea* (Mén.), Severtz. Stray Feathers, 1875, p. 428.*Sylvia momus* (Ehr.), Seebohm, Ibis, 1879, p. 316.*Figura unica.*

Blanford, Eastern Persia, ii. pl. xii.

♂ *ad.* *Sylvia melanocephala* similis, sed pallidior, corpore subtùs albo vinaceo tincto, nec griseo, caudâ brevior, pedibus fuscis, iride flavâ, periophthalmio nudo rubello.

♀ *ad.* *Sylvia melanocephala* similis, sed conspicuè pallidior, caudâ brevior facile distinguenda.

Adult Male (Jericho, 2nd January, 1864). Differs from *Sylvia melanocephala* in having the upper parts much paler, the black on the crown being clearly separated from the grey on the hind neck; underparts whiter than in *Sylvia melanocephala*, and without any greyish plumbeous on the breast and flanks, being almost pure white, washed, especially on the flanks and breast, with vinous pink; legs brown; bill dusky above, pale below; iris yellow. Total length about 5 inches, culmen 0.5, wing 2.15, tail 2.2, tarsus 0.75.

Adult Female (Hebron, 8th February, 1864). Much paler than the female of *Sylvia melanocephala*; upper parts generally dull reddish brown with an olivaceous tinge; the dark cap but imperfectly defined; underparts white tinged with pinkish, the flanks and breast slightly washed with pale vinous buff; wings and tail as in *Sylvia melanocephala*, but much paler.

THIS Warbler, which up to the present time has so very generally been looked on as specifically inseparable from *Sylvia melanocephala*, inhabits the Caucasus, Asia Minor, Palestine, and North-east Africa, ranging eastward into Persia and perhaps as far as India. Ménétriés, who met with it in the Caucasus, writes (*l. c.*):—"They are seen in pairs; and I only met with it at Saliane, on the banks of the Kour. It is very difficult to detect, as it frequents the small bushes, and when moving about it utters a low whistle. Canon Tristram met with both the present species and *Sylvia melanocephala* in Palestine, *Sylvia momus* being found in the more luxuriantly wooded

districts, as at Jericho, whereas *Sylvia melanocephala* frequented the open scrub. There can be no doubt that both species inhabit North-east Africa; and Von Heuglin, who refers to both under the name of *Sylvia melanocephala minor*, gives a description of *Sylvia momus*, stating at the same time that he considers it to be only a local race, and not specifically separable from *Sylvia melanocephala*—a view which I also formerly took, but have since found that it is erroneous. The specimens in the Berlin Museum, collected by Hemprich and Ehrenberg, were procured in Nubia and Syria; and this Warbler has been obtained by Mr. Blanford and Major St. John in Persia. The latter gentleman procured one in Southern Persia; and Mr. Blanford obtained it in gardens in the highlands of Southern and Central Persia, where it evidently breeds; for he found young birds both in Shiraz and Isfahán. He adds that he thinks this may possibly be the bird obtained by Jerdon in Southern India and described in his catalogue as *Sylvia cinerea*. When I wrote the article on *Sylvia melanocephala* I could not decide to separate the present bird from that species, especially as preserved skins of the two are so much alike that a pale, faded specimen of *Sylvia melanocephala* is scarcely to be distinguished from *Sylvia momus*; but Mr. Seebohm, who has lately been working at the Warblers, has pointed out that Bowman's Warbler always has a shorter tail than the Sardinian Warbler, which enables one to separate it when other characters are indistinct. Moreover there appears no doubt that freshly killed examples of the two forms differ very appreciably, inasmuch as in the male of *Sylvia momus* the upper parts are of a much paler and clearer grey tinge, and the underparts are white with a very slight or no grey tinge on the breast, but washed with rosy vinaceous, which appears to fade soon after death, as I find scarcely any trace of it in the preserved skins. Under these circumstances I think it advisable to treat this Warbler as a distinct species; and the two names above given as belonging to this species (*Curruca momus* and *Sylvia bowmani*) will have to be expunged from the synonymy of *Sylvia melanocephala*. At the same time I must now acknowledge that Canon Tristram was quite right in the view he expressed as to Bowman's Warbler being a good species. Respecting the coloration of the iris I am still very doubtful; for, as before stated, I possess specimens of *Sylvia melanocephala*, collected by Dr. Krüper, which he informed me had the iris yellow; but in that he may possibly have been mistaken, and it is very probable that the present species has the iris, as a rule, yellow, and *Sylvia melanocephala* red; this, however, cannot be decided until collectors take more careful notes of the coloration of the soft parts of the two species. Blanford figures it as having a reddish brown iris. There appears to be no doubt that the bird described by Ménétriés under the name of *Sylvia mystacea* is Bowman's Warbler; and it is somewhat remarkable that he also describes it as having a chestnut-red iris. As his description appears to have been frequently overlooked, this species having so generally been confused with *Sylvia melanocephala*, it appears to me advisable to transcribe it, as follows:—"Elle est en dessus d'un beau gris foncé, et une calotte noire orne la tête des mâles; les couvertures des oreilles sont de couleur foncée; de chaque côté à l'angle du bec descend une longue tache étroite et blanche; le cou et la poitrine sont de couleur vineuse, plus prononcée chez les vieux mâles; le ventre est blanc, teinté de rosâtre et un peu cendré sur les côtés, ainsi que les couvertures supérieures de la queue; les ailes sont brunes, et les plumes secondaires sont d'une teinte plus claire; la queue est étroite, étagée et noire; la plume extérieure est assez courte en proportion, et au trois quarts blanche,

les autres sont seulement terminées de blanc sale. La femelle est d'un gris roussâtre en dessus, et d'un blanc nankin en dessous.

“Le bec brun, avec la mandibule inférieure jaune depuis la base jusqu'à son milieu; l'iris marron clair, et les paupières jaunes; les pieds sont de couleur isabelle et les ongles noires.”

In habits Bowman's Warbler is said not to differ from *Sylvia melanocephala*. As regards its nidification I can give no data; for, so far as I can ascertain, no authentic eggs or nest are to be seen in any collection; it appears probable, however, that they are not much different from those of *Sylvia melanocephala*.

The specimens figured are an adult male and female obtained in Palestine by Canon Tristram.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. B. Tristram.

a, ♂. Jericho, January 2nd, 1864 (*H. B. T.*). *b*, ♀. Hebron, February 8th, 1864 (*H. B. T.*).

E Mus. H. Seebohm.

a, ♂ *juv.*, *b*, ♀. Jericho, January 1864 (*H. B. T.*). *c*, ♂ *juv.* Palestine, April 21st, 1864 (*H. B. T.*).

E Mus. Ind. Calc.

a, *b*, ♂ *ad.*, *c*, *juv.* Shiraz, Persia, June. *d*, ♂ *juv.* Isfahán (*W. T. Blanford*).

E Mus. Berol.

a, *b*. Nubia. *c*. Syria (*Hemprich & Ehrenberg*).



ORPHEAN WARBLER.
SYLVIA ORPHEA

SYLVIA ORPHEA.

(ORPHEAN WARBLER.)

- La Fauvette*, Buffon, Hist. Nat. Ois. vi. p. 31 (1783).
 “*Motacilla hippolais*, L.,” Bodd. Tabl. des Pl. Enl. p. 35 (1783, nec Linn.).
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Sylvia crassirostris, Rüpp. Atlas, p. 49, taf. 33, “Nubia” (1826).
Curruca orphea, *β. helenæ*, Ehr. Symb. Phys. Aves, fol. cc, “Syria” (1829).
Sylvia jerdoni, Blyth, Journ. As. Soc. Beng. xvi. p. 439, “India” (1847).
 ?*Artamus cucullatus*, Nicholson, P. Z. S. 1851, p. 195, pl. 43, “India.”
Curruca musica, L. Brehm, Naumannia, 1855, p. 283.
Curruca caniceps, Br. ubi?, cf. L. Brehm, Journ. für Orn. 1856, p. 455, “Spain.”
Curruca vidali, A. Br., L. Brehm, tom. cit. p. 455, “Spain.”
Curruca orphea griseocapilla, A. E. Brehm, Allg. deutsch. naturh. Zeit. 1857, p. 464, “Spain.”

Bec-fin orphée, French; *Bigia grossa*, Italian.

Figuræ notabiles.

D’Aubenton, Pl. Enl. 579. fig. 1; Werner, Atlas, *Insectivores*, pls. 34, 35; Fritsch, Vög. Eur. taf. 21. fig. 2; Naumann, Vög. Deutschl. taf. 76. figs. 3, 4; Gould, B. of Eur. pl. 119; id. B. of G. Brit. ii. pl. lxi.; Vieill. Faun. Franç. pl. 95. figs. 1, 2; Roux, Orn. Prov. pl. 213; Bettoni, Ucc. Lomb. tav. 33.

♂ *ad.* fronte, pileo et capitis lateribus nigris, versus nucham pallidior: dorso, scapularibus, uropygio et supra-caudalibus saturatè cinereis vix brunneo adumbratis: remigibus et tectricibus alarum nigricantibus pallidiore marginatis, secundariis pallidiore apicatis: rectricibus nigricantibus, rectrice extimâ in pogonio externo ad apicem et in pogonio interno centraliter albâ, rhachi nigrâ, duabus sequentibus maculâ apicali albâ: gulâ, gutture et corpore subtus albis, pectore et hypochondriis pallidè rufescente griseo lavatis, subcaudalibus et subalaribus pallidè rufescenti-griseis: rostro nigricante, mandibulâ ad basin cæruleâ: iride pallidè sulphureâ: pedibus brunnescenti-plumbeis.

♀ *ad.* mari similis, sed pallidiore, pileo sordidiore.

Juv. feminae similis, sed pallidiore et brunnescentiore, pileo grisescenti-plumbeo nec nigro, corpore subtus albicantior.

Adult Male in spring (Tangier). Crown, forehead, and sides of the head sooty black, becoming paler towards the nape, which, on its lower part, with the back, scapulars, rump, and upper tail-coverts, is dark ashy grey, with a slight sooty brown tinge; quills and wing-coverts blackish brown, with light

edges, the secondaries having also light tips; shafts of the primaries nearly black; tail-feathers blackish brown, the outermost pair white on the outer web at the tip and along the inner web in the centre, the black shaft showing conspicuously, the next two feathers on each side with a triangular apical white mark; throat and underparts white, on the breast and flanks washed with vinous grey, the under wing-coverts, tail-coverts, and lower part of the flanks being pale reddish grey; bill black above, below bluish, with black tip; iris bright sulphur-yellow; legs brownish lead-coloured. Total length about 6 inches, culmen 0·71, wing 3·1, tail 2·6, tarsus 0·91.

Adult Female (Madrid, 15th May). Differs from the male merely in being a trifle duller in colour, and in having the black on the head less developed. The soft parts (which I noted down from specimens just killed) are similar in both sexes.

Young of the year (Smyrna, 26th June). Differs from the adult female in having the upper parts paler and rather browner, the black on the head being replaced by lead-grey, and the underparts are also somewhat paler and whiter.

Obs. I have no specimen shot in the Western Palearctic Region in winter plumage, when, according to Professor Newton, the black cap changes to dark grey; but a male of the long-billed race, from Asia, shot at Karachi, Sindh, 11th November, 1871, is purer in colour than my European specimens in breeding-plumage, the black cap is darker and more clearly defined, the back is of a purer grey, and the underparts are a trifle whiter. Judging from specimens before me, I should say that the young bird alone has the crown grey in the autumn.

I refer below to the eastern race of the present species, which has a longer bill, and is somewhat larger in size; and the following Table will show the variation in specimens from various localities:—

| | Culmen. inch. | Wing. inches. | Tail. inches. | Tarsus. inch. |
|-------------------------|------------------|------------------|------------------|------------------|
| Spain, ♂ | 0·67 | 3·05 | 2·65 | 0·95 |
| Spain, ♀ | 0·65 | 2·95 | 2·5 | 0·9 |
| Tangier, ♂ | 0·68–0·71 | 3·05–3·1 | 2·55–2·6 | 0·9 –0·91 |
| Algeria, ♀ | 0·62–0·7 | 3·1 | 2·75–2·78 | 0·9 |
| Egypt | 0·72 | 2·98 | 2·76 | 0·88 |
| Syria, ♂ | 0·71 | 3·1 | 2·6 | 0·92 |
| Arabia | 0·75 | 3·15–3·18 | 2·67–2·75 | 1·0 –1·02 |
| Sennaar | 0·85 | 3·15 | 2·65 | 0·9 |
| Asia Minor, ♂ | 0·74–0·81 | 2·95–3·2 | 2·67–2·9 | 0·89–0·92 |
| Persia, ♂ | 0·77 | 3·2 | 2·62 | 0·95 |
| Persia, ♀ | 0·75 | 3·15 | 2·64 | 0·93 |
| Sindh | 0·81 | 3·15 | 2·76 | 0·97 |
| Kokand, ♂ | 0·83 | 3·15 | 2·9 | 0·98 |
| Kokand, ♀ | 0·88 | 3·05 | 2·88 | 0·91 |

THE Orphean Warbler inhabits Southern Europe and Northern Africa, having, as a straggler, been met with as far north as Great Britain, where, according to the late Sir William Milner, a specimen is said to have been obtained near Wetherby, on the 6th July, 1848, and is preserved in the collection he made. Professor Newton says that a young bird was caught near Holloway, in Middlesex, in June 1866, and kept alive by Sergeant-Major Hanley for nearly six months, as he (Professor Newton) was informed by the late Mr. Blyth, who carefully examined the specimen

in question. Mr. Harting, in his 'Handbook of British Birds,' says that "a nest and four eggs, *believed* to belong to this species, were taken in Notton Wood, near Wakefield, in June 1864;" and Mr. Gould, on the authority of Mr. Howard, says that its eggs are supposed to have been taken at East Grinstead. It is said by Gätke to have occurred in Heligoland; but it has not been recorded from North Germany; and, according to Baron De Selys Longchamps, it is of very rare occurrence in Belgium; but in Luxembourg it appears to be found every summer, from the plain of the Moselle to the heights of the Ardennes. Degland and Gerbe state that it is abundant in Provence and throughout the south-eastern districts of France. It is known to the Provençals as "Columbaonde," and arrives in the month of April, leaving in September. In Portugal, according to Dr. Rey, it is found throughout the country, but is not very common. He first observed it in a garden at Lisbon, his attention having been attracted to it by its song; and he found its nest in a lofty tree. He always met with it in the lofty olive and cork trees. I found it common near Madrid, in Spain; and great numbers of its eggs have lately been sent by collectors from that country. Colonel Irby says that it nests in the cork-wood and vicinity of Gibraltar, but is not so common as the Whitethroat. Dr. A. E. Brehm (Allg. deutsch. naturh. Zeit. 1857, p. 464) says that he found it "common in Catalonia, rarer in Valencia, frequenting the olive-groves. It affects localities where a few conifer trees are scattered amongst the non-evergreen growth, and in Catalonia it is always most commonly found in such places. During migration they visit all the conifer-groves; and even in such trees which stand alone a pair or a family will halt for a time. They migrate in September and May." Passing eastward I find it recorded by Bailly from Savoy, where, he says, it is principally found in the copses on the shores of the lake of Bourget, and in smaller numbers near Chambéry, Annecy, Bonneville, and so on to Genoa. It is a spring visitor to and breeds in Italy, where it is local, being rare in Tuscany, but rather commoner in Liguria, Piedmont, and Lombardy. In the Modenese it is rare, and Professor Doderlein can only cite two instances of its capture there, one in 1865 and the other in 1866. In Sicily it also appears to be extremely rare, and Professor Doderlein has only succeeded in obtaining a single specimen near Palermo, another one being in the Museum at Catania. From Sardinia it has not yet been recorded; but Mr. C. A. Wright records it from Malta, where he says (Ibis, 1864, p. 67) that it "appears to be rare; I have only seen a single specimen—one sent in 1858 to Sir W. Jardine by his son, who was serving in one of Her Majesty's ships on the station. Schembri states that a few pass yearly, in March, September, and October. A recent writer on Malta (Tallack) says it is common in the Soldiers' Cemetery at Floriana; but I believe this statement arose from a misunderstanding, and that the Sardinian Warbler (*S. melanocephala*) was meant." Lord Lilford met with it in the Ionian Islands, where, he says, it is occasionally seen in the spring, but is not common in Corfu. In Greece it is a common summer visitant; and my friend Mr. Seebohm informs me that it is "one of the earlier summer migrants to that country and Asia Minor, arriving early in April. It breeds in the Parnassus throughout the month of May, sometimes ranging almost up to the pine-region." The Ritter von Tschusi-Schmidhofen informs me that it breeds in Dalmatia, but is very rare in the Tyrol; and Messrs. Elwes and Buckley record it from Turkey. Von Nordmann speaks of it as being by no means rare in the Crimea, where it appears to breed. It is found commonly in Asia Minor; and Canon Tristram found it in Palestine, where he says (P. Z. S. 1864, p. 439) that it is

“frequent in spring in the wooded districts. Two specimens out of five agree with Hemprich & Ehrenb.’s variety *helenæ*: the other three do not; but in one instance the male is var. *helenæ*. The female shot with him off the nest is of the ordinary European type.” In North-east Africa it is rare. Von Heuglin says that it visits Egypt and Nubia in the autumn, and he obtained a specimen near the Pyramids; and I possess a specimen obtained in Egypt. It is, however, commoner in North-western Africa, and breeds in Algeria, having been also met with in Morocco; and I possess specimens from Tangier. Major Loche says that it is found in all the provinces of Algeria. Mr. J. H. Gurney, jun., met with it at Tibrem; and Mr. Osbert Salvin says (*Ibis*, 1859, p. 306) that it “is a tolerably common bird about the wooded hill-sides of Djendeli, where it usually breeds, though we sometimes obtained nests from the tamarisk-trees in the plain. Its nest much resembles that of the common Blackcap (*S. atricapilla*), but differs in being more compact and thicker; the position in the branch of the tree selected is usually similar. The note of this bird is pleasing, but hardly so much so as to entitle it to the name of the Orphean Warbler.”

To the eastward the present species, or rather a form having a larger and longer bill, and being, if any thing, a trifle larger in size, extends through Persia into India. I have unfortunately been unable to examine a sufficiently large series of eastern specimens to decide whether two distinct species of Orphean Warbler exist. That the eastern form or race having the large bill does not extend westward into my limits appears to be certain; or at least in Asia Minor specimens occur which are so exactly intermediate that it is impossible to say to which they are referable; for though the bills are longer than in examples from Spain and Tangier, they are much shorter than the bills of others from Turkestan and Persia. If a Turkestan example be compared with one from Spain it appears as if there were two very clearly distinguishable forms; but a series of specimens from intermediate localities shows that there is a regular gradation from the one to the other, and it is impossible to define where the one form ends and the other begins; hence, without having a larger series from Asia, I cannot do otherwise than consider that there is but one species of Orphean Warbler. Should, however, further investigation tend to show that the eastern bird is fairly divisible from our European *Sylvia orphea*, it will, I consider, stand as *Sylvia crassirostris*, Rüpp., with *C. orphea*, var. *helenæ*, Ehr., *Sylvia jerdoni*, Blyth, and *Artamus cucullatus*, Nicholson, as synonyms. Mr. W. T. Blanford examined the type of *S. crassirostris*, and considers that it is identical with Indian examples; and I examined Ehrenberg’s type of *Curruca orphea*, var. *helenæ*, in the Berlin Museum when there in company with that gentleman, and we agreed in considering it identical with eastern specimens.

Mr. Blanford found the Orphean Warbler in Southern Persia at a considerable elevation, and says that it evidently breeds there; but neither De Filippi nor Ménéties records it from Northern Persia or the adjoining countries; but Messrs. Dickson and Ross shot one in the Owaniyeh valley, on the Zebel mountains, on the 5th May, 1843. Severtzoff says that it occurs in Turkestan, and breeds in the north-western portion of that country, near Karatau, the river Aris, Kalles, Chir-chik, and the Syr-Darja. It breeds at an altitude of from 4000 to 8000 feet in the larch- and apple-districts, but during migration is found in the steppes and meadows at an altitude of from 3000 to 4000 feet. In India it is a cold-weather visitant. I have examined

a specimen from Sindh, collected by Mr. Blanford in November; and Dr. Jerdon (B. of Ind. ii. p. 208) says that "it is not rare in Southern India during the cold weather. I have seen it at Trichinopoly, Madras, and Nellore; also at Jaulnah and Mhow, in Central India, whence it appears to extend through the upper provinces, for Blyth has received it from Delhi; but it does not extend far to the eastward, for I did not see it at Sangor, and it is unknown in Bengal. It frequents groves, gardens, hedges, single trees, and even low bushes on the plains; is very active and restless, incessantly moving about from branch to branch, clinging to the twigs, feeding on various insects, grubs, and caterpillars, and also on flower-buds. It is sometimes seen alone, at other times two or three together." Captain Beavan also writes (Ibis, 1868, p. 73) as follows:—"I procured my first specimen of this bird at Kashurghur, Maunbhoom, in March 1864, and it was the only one that I observed in that district; but I found it tolerably common at Umballah in October 1866, where it frequents the babool-trees (*Acacia*, sp.), creeping about very silently, and, when disturbed, trying to sneak away into the thickest parts."

In its habits the present species appears to have much in common with the Blackcap (*Sylvia atricapilla*); and from what little I saw of it in Spain it appears, like that bird, to frequent small bushy localities, groves, and gardens. I most frequently saw it in the Royal Gardens near Madrid, and there shot a pair at one shot as they were pairing on a gravel walk. Col. Irby informs me that near Gibraltar they breed numerously, not only building in the bushes, but also in the fir trees at some altitude from the ground.

Dr. Th. Krüper, who met with the Orphean Warbler in Greece, has published (J. f. O. 1861, p. 276) some excellent notes on its song and habits, which are rather too long to translate fully, but from which I extract the following particulars. He first found it about three miles from Missolonghi in a bush-covered locality, and took a nest in a broom bush, but could not shoot the female, as she was too shy. In the month of May he was on an expedition with Dr. Nieder after nests of *Hirundo rufula*; and on passing a dense thicket they suddenly heard a loud song which he describes as composed partially of Nightingale notes, but still not uttered by a Nightingale, as the harsh notes of the Reed Warbler and the clear flute-like notes of the Thrush were uttered in succession. His companion did not know the bird, nor could they then discover what it was. In 1859 (the following year) he again visited the same locality and again heard the same loud clear song; but in spite of all his endeavours he could not succeed in shooting the bird, and only caught a momentary glance of it, and thought it must be a Rüppell's Warbler. In 1860, on the 3rd April, he again heard the same well-known song in the Parnassus, between Velitza and Dadi, and was fortunate enough to shoot two males, which proved to be Orphean Warblers. He met with it commonly near the village of Solirianica, three hours' journey from Calamata, and frequently heard its song, and says that it pleased him more than that of any Greek bird, though he speaks very highly of the melancholy notes of *Aedon galactodes*. In Greece he found its nest late in April, usually placed in the top of a bush and never closely concealed. The nest is composed of coarse bents and plant-stems, and lined with finer bents, intermixed with plant-cotton; it is not loosely constructed, but tolerably strongly and thickly built. The female appears to undertake the cares of incubation alone, without any assistance from the male, who sings at a considerable distance from the nest. On Taygetus he seldom or never heard the male singing in the bushes, but it was generally perched and uttered its ditty

on the top of an olive or pear-tree. It is easiest to approach it whilst it is singing; but the moment the song is ended it is necessary to stand quite still. If it believes itself safe it will remain a quarter of an hour or longer on the same perch, in which it differs from the other Warblers, excepting *Aedon galactodes*; but it is true that it is not often found so tranquil, and when once disturbed it is as shy and uneasy as any of its allies. He shot a female on the 18th May, and did not hear the male singing on the 17th or 18th of that month; but on the 19th, when he visited the same locality, he heard it calling the female, and flying from tree to tree, and shot it also. Later than June he did not see any Orphean Warblers, and believes that they leave as soon as *Hypolais pallida* and *Hypolais olivetorum*.

The food of the present species consists almost entirely of small insects, caterpillars, small beetles; but it is said in France to eat berries in the autumn, and is then regarded as a great delicacy for the table. I have a large series of eggs of the Orphean Warbler in my collection, obtained in Palestine, Spain, and Greece, all of which have somewhat the same character, though they vary not a little *inter se*, especially as regards the profuseness or scarcity of markings, and more particularly as regards size. In several of the clutches from Spain there is one extremely large egg, which at first I thought might possibly be that of a Cuckoo; but a careful scrutiny of these large eggs shows that they must only be abnormally large Orphean Warblers' eggs. In colour the eggs of this species are French white, or white with the faintest sea-green or bluish tinge, and are more or less spotted and blotched with pale purplish grey underlying shell-markings, and blackish or dark reddish brown overlying surface-spots. In size the ordinary eggs measure from $\frac{3.0}{4.0}$ by $\frac{2.3}{4.0}$ to $\frac{3.3}{4.0}$ by $\frac{2.5}{4.0}$, and the abnormally large eggs from $\frac{3.4}{4.0}$ by $\frac{2.6}{4.0}$ to $\frac{7.1}{8.0}$ by $\frac{5.4}{8.0}$ inch. The Palestine eggs appear, if any thing, a trifle larger than the usual run of eggs from Spain, not taking into consideration the abnormally large specimens.

The specimens figured are a male from Tangier and a female shot by myself in Spain, both being in my collection, as are also the others described.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a, ♂, *b*, ♀. Casa Campo, Madrid, May 15th, 1866 (*H. E. D.*). *c*, *d*. Tangier. *e*. Egypt (*Rogers*). *f*, ♂. Asia Minor, April 1871 (*Dr. Krüper*). *g*, ♂ *juv.*, *h*, ♂ *juv.* Asia Minor, June 1871 (*Dr. Krüper*). *i*, ♂ *juv.* July 1871 (*Dr. Krüper*). *j*, ♂, *k*, ♀. Kokand, Central Asia (*Dode*).

E Mus. Ind. Calc.

a, *b*, ♂, *c*, ♀. Near Niriz, east of Shiráz, S. Persia, 7000 feet altitude, June 1st. *d*, ♂ *juv.* Abadah, between Isfahan and Shiráz, 6000 feet, July (*W. T. Blanford*). *e*, ♂. Karachi, Sindh, November 11th, 1871 (*W. T. B.*).

E Mus. Berol.

a, ♂. Syria, type of *S. orphea*, var. *helena*. *b*, *c*. Arabia (*Hempr. & Ehr.*).

E Mus. E. Hargitt.

a, ♂. Smyrna. *b*, ♂. Smyrna, May 26th, 1871 (*Dr. Krüper*).

E Mus. Salvin and Godman.

a. Europe (*J. Gould*). *b*, *c*, ♀. Province of Constantine, Algeria, May 18th, 1857 (*O. Salvin*).



RÜPPELL'S WARBLER

SYLVIA RÜPPELLI

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SYLVIA RUEPPELLI.

(RÜPPELL'S WARBLER.)

Sylvia rupellii, Temm. Man. d'Orn. p. 129 (1835).*Sylvia capistrata*, Rüpp. Mus. Senk. t. ii. p. 181 (1837).*Curruca ruppelli*, Bp. Comp. List, p. 14. no. 110 (1838).“*Sylvia melandrios*, Linderm.,” Krüper, Journ. für Orn. 1861, p. 279.*Figuræ notabiles.*

Temminck, Pl. Col. 245. fig. 1; Rüppell, Atlas, taf. 19; Werner, Atlas, *Insectivores*, Suppl. pl. 2; Gould, B. of Eur. pl. 122; Bree, B. of Eur. ii. pl. to p. 26; Fritsch, Vög. Eur. taf. 21. fig. 1.

♂ *ad.* capite summo, loris et regione oculari, gulâ et gutture nigris, striâ mystacali conspicuâ albâ: nuchâ, dorso cum scapularibus, uropygio et supracaudalibus plumbescenti-cinereis: remigibus nigricantibus, primariis vix, secundariis et tectricibus alarum conspicuè albicante marginatis: rectrice extimâ (basi exceptâ) albâ, secundâ in pogonio interno maculâ magnâ apicatâ, reliquis nigris vix griseo adumbratis, tertiâ et quartâ maculâ obsoletâ apicatis: pectore et corpore imo subtus albis vix rosaceo lavatis: hypochondriis et subcaudalibus dilutè plumbescenti-cinereis: rostro nigricanti-brunneo, mandibulâ ad basin flavicante: iride fuscâ: pedibus pallidè brunneis.

♀ *ad.* mari similis, sed pileo brunnescenti-cinereo vix nigro notato: gulâ, gutture et corpore subtus albis, hypochondriis et pectore brunnescente cinereo lavatis: corpore suprâ, alis et caudâ sordidioribus et brunnescentioribus quam in mare.

Adult Male (Smyrna, 24th March). Crown, lores, and region round the eye jet-black; nape, back, scapulars, rump, and upper tail-coverts bright blue-grey; wings blackish brown, the primaries narrowly and the secondaries and wing-coverts broadly margined with whitish, outermost tail-feather on each side white, with an oblique blackish mark on the base of the inner web, the second blackish, with a large terminal white patch on the inner web, and a narrow white tip to the outer web; remaining feathers black, with a greyish tinge, the third having a triangular apical white mark; chin and entire throat jet-black; from the base of the lower mandible, extending backwards some distance, is a pure white streak; sides of the neck similar to the back, rest of the underparts white, with a faint rosy tinge, the flanks being washed with blue-grey; bill blackish brown, yellowish at the base of the under mandible; iris dark brown; legs pale brown. Total length about 5·2 inches, culmen 0·58, wing 2·75, tail 2·58, tarsus 0·8.

Adult Female (Smyrna, 7th April). Differs from the male in lacking all black on the head and throat, and in being generally duller and browner in colour; crown greyish brown, some of the feathers blackish at the base; back greyish brown; wings and tail duller and browner than in the male; throat and entire underparts white, on the flanks, and to a slight extent on the breast, washed with brownish grey.

Young Male of the year (Smyrna, 12th July). Resembles the adult female, but the upper parts are some-

what duller, and the head, especially, browner in colour; secondaries with dull rufous, not pale whitish-brown margins; throat, breast, flanks, and crissum strongly tinged with dull sandy brownish grey.

Obs. I have a specimen from Syria, said to be a winter-killed bird, which resembles the adult male, but has the black on the head edged with pale brownish, the black feathers on the throat tipped with dirty white, the back browner, and the underparts slightly washed with dull greyish sandy brown. It appears to me to be an old bird in winter-plumage, but it may possibly be a bird which has not attained the fully adult stage of plumage. In Captain Shelley's collection there is a specimen of an old female which somewhat resembles the male in plumage, as the crown is brownish black, and the feathers on the throat are marked with black.

Obs. Several authors have given *Curruca leucomelæna*, Ehr. (Symb. Phys. fol. cc, 1829), as a synonym of the present species; but I could not in any case agree to reject the name of *Sylvia rueppelli* in favour of that of *S. leucomelæna*, as I am by no means certain that the birds obtained by Hemprich and Ehrenberg are really the young of the present species. When at Berlin in September last I carefully compared the type of *Curruca leucomelæna* with the young of *Sylvia rueppelli*; and though they resemble each other tolerably closely, there are several important points of difference. There is but one specimen in the Berlin Museum, the one from Arabia, the other two obtained by Hemprich and Ehrenberg having evidently been parted with. This one specimen is in rather worn plumage, the outer rectrix on each side is wanting, and the tail is especially abraded, which may account for the total absence of white on it; and the shape of the wing differs greatly from that of *Sylvia rueppelli*; but it otherwise closely resembles the young of that species. The second (or first long) primary measures about 0·8 inch shorter than the third in one, and 0·85 in the other wing, and is about 0·6 inch longer than the wing-coverts; the third primary is 0·25 inch shorter than the fourth, the fourth, fifth, and sixth are about equal; the secondaries reach to within about 0·2 inch of the end of the wing; the seventh, eighth, and ninth quills are wanting in both wings. The measurements are—culmen 0·59 inch, wing 2·75, tail 2·55, tarsus 0·83. In *Sylvia rueppelli* the first primary is very small indeed, not reaching beyond the wing-coverts, and is 1·45 inch less than the second, and the second, third, and fourth are nearly equal, the third being the longest.

THIS, one of the most beautiful of our European Warblers, is certainly one of the rarest, having been found only in Greece, Asia Minor, and North Africa, being a summer visitant to Greece and Asia Minor, retreating to its winter quarters in Africa very early in the autumn. In Greece it is an extremely rare bird. Count von der Mühle (Orn. Gr. p. 72) says that he shot a single specimen, which was sitting quietly on a free-standing branch of a fruit-tree, and was so little shy as to be undisturbed by several shots discharged in the neighbourhood at Titmice. It sat with pendent tail; and he at first mistook it for a White Wagtail, until he observed its position and movements. Lindermayer (Vög. Griechenl. p. 102) says that it breeds in Greece, and is met with in the northern portions of that country, as well as on the islands of the archipelago. He further says that it arrives very late and leaves again very early. Dr. Krüper says (J. f. O. 1861, p. 279) that he obtained a specimen near Sotirianica, in Greece, in the dry bed of a brook, the sides of which were rocky and covered with brushwood, but did not obtain any other during the time he collected in Greece. In Asia Minor, however, it appears to be much commoner, as Dr. Krüper has not only sent home numerous specimens of the bird, but its nest and eggs. Canon Tristram refers to it as being resident in Palestine, but not very common; Mr. C. W.

Wyatt obtained a specimen in Wády Hamr, on the peninsula of Sinai, and found it not uncommon amongst the retem-bushes. In North-east Africa it appears to be tolerably common during migration; but I cannot with any certainty ascertain how far south it ranges in Africa. Captain Shelley (B. of Eg. p. 106) says that "it is moderately abundant throughout Egypt and Nubia. Its habits are not so lively as those of many of its congeners, and it may frequently be seen sitting still on the topmost bough of some low tree or cotton plant." Von Heuglin (Orn. N.O. Afr. p. 314) says that it is a migrant in Egypt, Nubia, and Arabia, where it is met with in hedges, *Arundo donax*, tamarisks, thorn bushes standing alone both in gardens and near water, in the fields, meadows, and dry almost desert places. In Lower Egypt he saw the first between the 6th and 10th of March; from the 15th to the 25th they became rarer, but were generally seen in pairs, often in company with the Subalpine Warbler; and he saw it on the islands and coast of the Red Sea southwards to Massowah. About the middle of April they had all disappeared, but were seen again singly in September on the passage southward. He considers that it ranges as far south as about 16° N. lat. in the Bischarin desert, Takar, and Samhar.

It is found in North-west Africa. Major Lóche speaks of it as being rare in Algeria, but adds that some few pairs breed there, and he found a nest near Milianah.

But little is known respecting the habits and song of the present species. Von Heuglin (*l. c.*) says that it is sprightly and active in its movements, and during migration frequents bushes and reeds, keeping down in the thickest portions, where it seeks carefully after insects, and is hard to drive out of the thickets. I cannot find any reference to its song; but Dr. Krüper says that its call-note resembles that of the Sardinian Warbler.

I possess one egg of Rüppell's Warbler, taken by Dr. Krüper near Smyrna, on the 16th of April, 1872, and am indebted to Mr. Seeböhm for the loan of a nest, also taken in that locality by Dr. Krüper. The nest is tolerably well and firmly constructed and neatly formed, being cup-shaped, is built of dried grass bents and the fine stems of plants, and is carefully and neatly lined with fine horse-hairs. The egg is very closely marked all over the surface of the shell, which is greyish white, with small greyish brown dots, which run into each other, not being clearly defined, and give the egg a greyish brown marbled appearance. It most nearly resembles the eggs of the Spectacled Warbler, but is larger, measuring $\frac{2.9}{40}$ by $\frac{2.3}{40}$ inch, and rather darker.

The specimens figured are an adult male to the right and an adult female to the left, both being in breeding-plumage; and in the background is a young bird of the year. The birds described are those which are figured, and are in my collection; particulars as to locality are given above.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a, ♂. Smyrna, March 24th, 1871. *b*, ♀. Smyrna, April 7th, 1871. *c*, ♂ *juv.* Smyrna, July 12th, 1871 (*Dr. Krüper*). *d*. Syria, winter (*Rogers*).

E. Mus. G. E. Shelley.

a, ♂. Nubia, April 9th, 1870. *b*, ♀. Assouan, April 15th, 1870. *c*, ♀. Nile-Delta, Egypt, March 24th, 1871 (*G. E. S.*).

E Mus. Salvin & Godman.

a, ♂ *ad.* Smyrna (*Krüper*).

E Mus. Howard Saunders.

a, ♂ *ad.* Smyrna, April 2nd. *b*, ♀ *ad.* Smyrna, April 14th (*Dr. Krüper*). *c*, ♂. Egypt (*E. C. Taylor*).

E Mus. H. B. Tristram.

a, ♂. Gilead, Palestine (*Cochrane*). *b*, ♀. Galilee (*Cochrane*). *c*, ♂. Galilee, April 1864. *d*, ♀. Mount Carmel, March 23rd, 1864 (*H. B. T.*).



BLACKCAP
SYLVIA ATRICAPILLA
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SYLVIA ATRICAPILLA.

(BLACKCAP.)

- Ficedula curruca atricapilla*, Briss. Orn. iii. p. 380 (1760).
Motacilla atricapilla, Linn. Syst. Nat. i. p. 332 (1766).
Sylvia atricapilla (Linn.), Scop. Ann. I. Hist. Nat. p. 156. no. 229 (1769).
Fauvette à tête noire, Buff. Hist. Nat. Ois. v. p. 125 (1778).
Curruca atricapilla (Linn.), Boie, Isis, 1822, p. 553.
Monachus, Kaup (*Sylvia atricapilla*, L.), Natürl. Syst. p. 33 (1829).
Curruca nigricapilla, C. L. Brehm, Vög. Deutschl. p. 417 (1831).
Curruca atricapilla, C. L. Brehm, op. cit. p. 418 (1831).
Curruca pileata, C. L. Brehm, op. cit. p. 418 (1831).
Ficedula atricapilla (L.), Blyth, in Rennie's Field-Nat. i. p. 310 (1833).
Curruca rubricapilla, Landbeck, Vög. Würtemb. p. 44 (1834).
Philomela atricapilla (L.), Swains. Classif. of Birds, ii. p. 240 (1837).
Epilais atricapilla (L.), Cab. Mus. Hein. i. p. 36 (1850).
Curruca ruficapilla, C. L. Brehm, Vogelfang, p. 227 (1855).

Fauvette à tête noire, French; *Tutinegra real*, Portuguese; *Pulverilla*, Spanish; *Capinera*, Italian; *Mönch*, *Schwarzkopf*, *Schwarzkappe*, German; *Zwartkop*, Dutch; *Sorthovedet-Sanger*, Danish; *Munk*, Norwegian; *Svarthufvad Sångare*, Swedish; *Mustapää-Kerttu*, Finnish.

Figuræ notabiles.

D'Aubenton, Pl. Enl. 580. figs. 1, 2; Werner, Atlas, *Insectivores*, pls. 37, 38; Kjærbo. Orn. Dan. taf. xx.; Fritsch, Vög. Eur. taf. 24. figs. 9, 18; Naumann, Vög. Deutschl. taf. 77. figs. 2, 3, and taf. 368. figs. 1, 2; Gould, B. of Eur. pl. 120; id. B. of G. Brit. ii. pl. 60; Schlegel, Vog. Nederl. pl. 68.

♂ *ad.* pileo toto nigro: nuchâ cinereâ: dorso, alis et caudâ cinereo-fuscis: mento cinereo-albo: gulâ et pectore cinereis: abdomine et subalaribus albis: alis et caudâ subtùs cinereis: pedibus plumbeis: rostro saturatè corneo: iride fuscâ.

♀ *vix major et brunnescentior*: pileo rufescenti-fusco.

Adult Male (near Reading, May). Entire crown above the eyes deep glossy black, nape bluish ash; back and upper parts generally ashy brown, becoming bluish ashy on the rump and upper tail-coverts; wings dark brown, with brownish ashy external margins to the feathers; tail ashy brown, without white on any of the feathers; underparts ashy grey, the chin, abdomen, and under tail-coverts nearly white, the last with dark centres; under wing-coverts white; bill dark horn; iris brown; legs lead-colour. Total length about 5·5 inches, culmen 0·45, wing 2·95, tail 2·45, tarsus 0·85.

Adult Female (Malta, October). Differs from the male in being somewhat larger in size, in having the crown rusty red, not black, the upper parts browner, without any trace of ashy blue; chin, upper throat, and abdomen dull white, the centre of the last pure white; flanks, breast, and the centres of the under tail-coverts dull ashy brown. Total length about 6 inches, culmen 0·5, wing 3·1, tail 2·65, tarsus 0·85.

Young (Hampstead, near London, June). Upper parts duller and browner than in the female, the crown browner and less rufous; underparts dull ashy grey, becoming white on the abdomen.

Winter plumage. It appears that in the winter season some males are found with black heads and some with red heads like the female; and I should think that the latter are young birds which have not obtained the full dress. Otherwise the winter dress does not appear to differ from that worn in the summer, except that it is rather duller.

Obs. It would seem that in some instances the male does not assume the black head after the first winter, but breeds in a plumage much resembling that of the female; and in this dress it has been described by Landbeck, under the name of *C. rubricapilla*, as a distinct species. Curiously enough, however, it would seem that it is only in exceptional cases that the red head is retained over the summer of the year following its first winter, and by no means the rule. Specimens of old males shot at Malta in December and February differ only in being a trifle duller in colour, but have the black cap fully developed.

THE present species, one of our best and most familiar songsters, is found throughout Europe, except in the extreme north; eastward it occurs at least as far as Persia; and in Africa it has been met with as far south as the Gambia. It likewise inhabits the Canaries, Madeira, and the Azores.

In Northern and Central Europe it is only a summer resident, but winters in various parts of Southern Europe. In Great Britain it is found during the breeding-season in all the counties of England and Wales, becoming, however, rarer towards the north. Professor Newton states that Mr. Rodd has remarked that of late years it has increased in numbers in Cornwall; and this is probably the case also in several other localities. Mr. Metcalfe, of Kendal, informs me that although many ornithologists have said that it is rare in Westmoreland it certainly is common; and, he writes, "its wild and rich song may be heard in any of the woods and orchards of Kendal and the vicinity. Although we cannot boast of having the Queen of Songsters in the Lake Districts, we do not wish to be defrauded of the mock Nightingale."

In Scotland, Mr. R. Gray says, though nowhere numerous, it appears to be widely distributed from near Cape Wrath to the shores of the Solway; and Professor Newton states that "its nest has been found in many counties, particularly to the south of the Clyde and Forth. Beyond these firths it is recorded as breeding regularly in the counties of Argyle, Clackmannan, Perth, Banff, and Ross; and it has been procured more than once, and even later in the year, in Caithness, and also in Orkney." In Ireland, Thompson says, it is perhaps a regular summer visitant to certain districts, but is very local. It has been met with in the counties Wicklow, Waterford, Cork, and Galway, and is known to have bred in Tipperary. It is somewhat remarkable that there are several instances of its occurrence in Ireland in the winter season; for as a rule it is a summer visitant only to our isles; but Mr. Stevenson also states (B. of Norf. i.

p. 125) that in 1852 a male, in good condition, was killed in Norfolk as late as the 22nd of December.

It is found in Scandinavia, being in Norway, Mr. R. Collett informs me, tolerably widely distributed, though somewhat rare. It is found in all the southern and western districts, and as far north as the Trondhjems fiord, where, as also in the Örkedale, it has been found breeding. On the fells it occasionally passes above the conifer-growth. Nilsson says that it is generally, though not numerous, distributed throughout Sweden, from Skåne to the most northerly districts, arriving late in April and leaving late in September or early in October. In Finland it is a rare bird, and, Von Wright says, is occasionally seen near Helsingfors during the autumn passage. It has been observed in Åbo Län, near Kuopio, and between Uleåborg and Torneå. It was met with by Mr. Meves in Russia, and was common at Ladeinopol, Wiutegra, and Kargopol. Mr. Sabanäeff says that it is much more numerous in the Government of Moscow than in that of Jaroslaf. In the Ural it is not uncommon; but he did not observe it further north than Ekaterinburg. Throughout the whole of Germany it is a common and generally distributed summer visitant, being, however, Borggreve states, commoner in the west than in the east; and in Denmark it is, Kjærbølling writes, neither common nor yet rare during the summer from April or early in May to the end of September. In Holland, Belgium, and in France it is very common; Degland and Gerbe say that it is only met with during passage in the north of France, where it occurs in April and in September, but in the south of France it remains throughout the winter; but Messrs. Jaubert and Barthélemy-Lapommeraye say nothing about its being resident there, but merely state that some arrive from the north even as late as December.

In Portugal it is said to be common; but Dr. E. Rey writes (J. f. O. 1872, p. 149) that he only once observed it at Barreiro, on the 23rd March, but he did not meet with it in Algarve. In Spain, Colonel Irby states, "it is to be seen during every month in the year, but is, of course, most common in February and October;" Mr. Saunders also observed it during passage; and Von Homeyer records it as found in the Balearic Islands, where, however, it is not common. Lord Lilford, in a note to me respecting the present species, says, "I found great numbers of Blackcaps in the markets of Marseilles and Cannes in November 1874 and January 1875, and have every reason to believe that many winter in Southern France. Common about Naples in February, and about Catania and Syracuse in March and April. Tolerably common in Cyprus in April and May of this year (1875)." Bailly says that in Savoy it is common as high as the pine-woods extend, and he found it up to from 1400 to 1800 metres above the sea-level. Throughout Italy and Sicily it is said to be common at all seasons, many remaining there throughout the winter; and in Sardinia, Mr. A. B. Brooke writes (Ibis, 1873, p. 241), it is "common and abundant, arriving in considerable numbers in spring in Sardinia. I think a few remain in favourite localities all the winter, as I have seen them early in March, long before the arrival of any species of Sylviidæ. They are very partial to olive-groves." In Malta it appears only to occur during passage and in winter; Mr. Wright says (Ibis, 1864, p. 67), it "has been observed in January, February, and March, as well as in September and October. I shot two males in February 1859 and a female the following March. Two were taken in October 1858, and one or two others in October 1860. One was obtained in Gozo in January 1861; and

two or three more were seen at the same time. I purchased two in the market in the last week of September 1862, and have since obtained two or three others."

Lindermayer says that in Greece it is certainly resident, frequenting the more elevated districts during the breeding-season, and the olive-groves and bushes in the lowlands during the winter, when it is extremely common. Von der Mühle remarks that in the autumn it feeds on the fruit of the cactus (*Cactus opuntia*), and often stains its throat bright yellow, which colour is not easily washed off or removed; and I have seen specimens both of the present species and *Sylvia melanocephala* similarly stained. Salvadori remarks that Zuccarello-Patti, of Catania, described in 1844 a bird thus stained as a variety of the present species; but he does not appear to have given it any specific name. In Southern Germany and in Turkey it is also a common bird, and breeds numerous in the south of Russia. In Asia Minor it remains during winter in small numbers, at which season Dr. Krüper met with it near Smyrna, and says that during bright sunny weather it may sometimes be heard singing in the gardens. Canon Tristram met with it in Palestine, and says (*Ibis*, 1867, p. 84) "*S. atricapilla* was much more abundant in winter than afterwards, though still common enough. In winter it was gregarious, and all the males we shot were in the same livery as the females, the black cap not being assumed till March." It is a common species in North-east Africa, but does not appear to remain there to breed. Von Heuglin says that it is a migrant in Egypt, Nubia, Abyssinia, and along the Red Sea, and appears singly or in pairs in Egypt in February or March, and again in the autumn. Lefebvre saw it in Abyssinia in September; and Von Heuglin himself met with it in the same month in some of the islands in the Red Sea, and in February in Semien at an altitude of 10,000 feet. In North-west Africa it is very common during winter, and also remains there to breed. Mr. J. H. Gurney, jun., says that he found it very numerous near Algiers in February, but it is not so common in the summer season. About Tangier it is, according to Favier (*fide* Irby, *Orn. Str. Gibr.* p. 84), "nearly as common as *S. melanocephala*, being seen on all sides during migration, passing north in January and February, returning in October. Many remain to nest." Specimens have been obtained from Senegal and the Gambia; and Temminck states that it occurs at the Cape of Good Hope, which is not impossible; but he is clearly wrong in stating that it has been obtained in Java and Japan.

It inhabits the Cape-Verd Islands, the Canaries, Madeira, and the Azores. Dr. Dohrn says (*J. f. O.* 1871, p. 5), it is "common all over the Cape-Verd Islands; in January I found nests with eggs on orange-trees at San Antao." Dr. Carl Bolle says that it inhabits the wooded districts of Teneriffe; and Mr. F. DuCane Godman writes (*Ibis*, 1872, p. 174) as follows:—"This bird is very common in the Canaries, Madeira, and the Azores, and is much prized by the inhabitants for its singing-qualities. It is caught in considerable numbers and kept in cages, and is easily domesticated. In both Madeira and the Azores a variety is not unfrequently found having the black on the head extending as far as the shoulders and round under the throat." This variety, which was first noticed by Heineken (*Zool. Journ.* v. p. 75), was described by Sir William Jardine (*Edinburgh Journ. Nat. and Geogr. Sc.* i. p. 243, 1830) as a distinct species under the name of *Curruca heineken*; but I have been unable to obtain the necessary materials in the way of specimens of this bird to enable me to decide if it is merely a variety or a good species; the general opinion, however, of those who have seen it in its native haunts is that it

is only a variety. Mr. Godman writes (*Ibis*, 1866, p. 95) as follows:—"A curious variety is not unfrequently met with [in the Azores], having the black marking on the head extending to the shoulders and round under the throat. I only saw one individual, which was in a cage with a common Blackcap. It appeared to be slightly larger, though in other respects the same, with the exception, of course, of the dark markings. I was told that some individuals have the whole of the underparts of the body black. The story current in the Azores with regard to them is, that when the parent lays more than four eggs, one bird always proves to be this variety. In Fayal it is known by the name 'Avinagreira,' a term given to the Redbreast in St. Michael's."

To the eastward the Blackcap is found as far as Persia. Major St. John says that he shot a specimen in an oak-forest near Shiráz in 1864, and picked up a dead one in the mission garden at Tehrán. Mr. Blanford did not see it in Persia; but Ménétries noticed it in the forest at Lenkoran, on the Caspian; and De Filippi saw it at Delidian, just north of the Persian frontier, between Tiflis and Tabriz.

In habits the Blackcap reminds one much of the Garden Warbler. It is found in gardens, groves, and non-evergreen woods where the underwood is tolerably dense, but not in the dense forests, though it is not unfrequently seen on the outskirts of these latter when the tree-growth is somewhat varied. Where, however, there are small plantations and shrubberies in the vicinity of inhabited places, there one is almost sure to meet with it; but it avoids open places, and is rarely seen away from a shrubbery or wood. It arrives usually in April from its winter quarters, and leaves again for the south in October, being a true migrant, and evidently unable to sustain existence during the winter in Northern and Central Europe. It frequents the upper branches of moderate-sized trees and thickets of bushes, and appears to shun observation by keeping under shelter of the foliage, amongst which it hops and passes with ease, keeping its body somewhat in a horizontal position; but on the ground it is rather clumsy in its movements, and hops heavily about, showing that it is far less at home there than amongst the branches. When alarmed or surprised it jerks the tail and elevates the feathers on the crown somewhat; but, as a rule, it is by no means a shy or very timid bird, though it is extremely peaceable and lives on excellent terms with the other species which inhabit the same district. It flies unwillingly, except short distances; and its flight is not very swift, but resembles, to some extent, that of a Thrush. When on passage it is said to fly quicker, its flight being tolerably direct. Though usually seen amongst the foliage, it appears fond of sunning itself in the early morning, and will then perch on some elevated open standing spray and enjoy the genial rays of the sun with evident pleasure. Its call-note is a somewhat sharp note, resembling the syllables *tack, tack*, or *teck, teck*, uttered quickly; and its alarm-note is a harsh low call like the syllable *sharr*. Its song is rich and very sweet, not much below even that of the Nightingale in melody, soft and mellow, reminding one somewhat of the song of the Thrush or of the Robin. It sings very constantly, and is therefore much more frequently heard than seen. When singing it is usually perched on some elevated spray; but if it finds itself watched or if disturbed it instantly dives down into the thicket. Macgillivray, whose description of the song of birds is always so truthful and well rendered, writes respecting the vocal melody of the Blackcap as follows:—"Listen to those strains that issue from the midst of that broad plane tree, so loud, so clear, so melodious, so modulated, so surpassingly beautiful, if one may so speak, that surely no bird ever sang so sweetly. It is a

Thrush, I know it by that peculiar inflection: yet no, it cannot be, for the sounds are not quite so loud, nor is the strain so broken. The notes follow each other with rapidity, now the enunciation is hurried, anon deliberate, but always distinct, and neither strained nor slurred by haste. You fancy that parts of the song resemble that of the Redbreast, the Garden Warbler, the Song-Thrush, and perhaps the Sky-Lark, or that it is a graceful and harmonious combination of the songs of these and perhaps other birds; yet if you listen more attentively you will be persuaded that the bird is no imitator, but that it sends forth in gladness the spontaneous, unpremeditated, and unborrowed strains that nature has taught it to emit as the expression of its feelings.

“The song, if divided into fragments, would suffice for half a score of ordinary Warblers, and is of surprising compass, and melodious beyond description.

“None of the notes seem to resemble those of the Blackbird, although they have been so represented; nor are they so plaintive as those of the Thrush. The song is decidedly cheerful, but not merry like that of the Lark, and is, therefore, not apt to cherish melancholy, but rather to encourage hope, and induce a placid and contented frame of mind, in which are combined admiration of the performer, and a kind of affection towards it, which renders it almost impossible for you to level your death-dealing tube at it.”

The food of the Blackcap consists chiefly of insects during the spring and early summer; and as it searches for these amongst the bursting buds and fresh foliage of the trees, it does much good in destroying numbers of noxious insects which otherwise would soon effect considerable damage. It feeds chiefly in the trees and bushes, searching for its food amongst the foliage and in the crannies of the bark of the trees, and but seldom resorts to the ground in search of small worms &c. In the autumn when the fruit and berries are ripe it feeds largely on these, especially on cherries, to which it is very partial, eating the fleshy portion and leaving the stones hanging on the stalks; and it also feeds on many sorts of berries, of sorts which are under cultivation as well as the wild ones. If the stones are swallowed, they are rejected and cast up; and occasionally cherry-stones are swallowed and thrown up again. Naumann relates an instance of a Blackcap being found dead under a cherry-tree, choked by a cherry-stone which it had swallowed, and which on being thrown up had stuck firmly in its throat.

It selects for the purposes of nidification a bush or low tree in a grove or garden, usually where the bushes are somewhat scattered, and the brambles and creepers fill up between. The nest is placed either in the brambles and creepers, or in one of the branches which shoot out sideways from a bush, and is somewhat loosely constructed of grass, straws, and fine roots, and lined with fine bents and a few horsehairs; and occasionally a little moss is interwoven in the external portion of the structure. Two broods are raised in the season, the first eggs being generally deposited late in April; and the second nest is commenced directly the young of the first brood are able to shift for themselves. Incubation lasts a fortnight; and both male and female take their turn on the nest. Naumann affirms that the female sits from the evening throughout the night up to about nine or ten o'clock in the forenoon, when she is relieved by the male, who incubates during the day.

Like those of its close relative (*S. melanocephala*) the eggs of the present species are subject to no slight variation. The typical eggs are either like a dark Garden-Warbler's egg, or else

tinged with a warm pink; but I possess eggs which might easily be mistaken for those of the Garden-Warbler. The ground-colour of the ordinary type of egg is greyish or French white, clouded with pale greyish brown and marked with indistinctly defined brown blotches; but here and there are one or two small distinctly defined dark spots in some eggs. The reddish-coloured eggs are similarly marked; but the ground-colour and clouding is pinkish, and the markings are reddish brown. In size those in my collection average about $\frac{2.9}{4.0}$ by $\frac{2.3}{4.0}$ inch.

The specimens figured and described are an adult male obtained near Reading in May, and an old female from Malta, the young bird described being from near London.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a, ♂. Near Reading, May 4th, 1870 (*R. B. Sharpe*). *b*, ♂ *ad.* Hampstead, September 1870. *c*, *juv.* Hampstead, June 1871 (*Burton*). *d*, ♂? *juv.* Jægersborg, Denmark, September 20th, 1870 (*A. Benzon*). *e*, ♂. Gibraltar, May 14th, 1874 (*Colonel Irby*). *f*, ♂ *jun.* Spain (*H. Saunders*). *g*, ♂, *h*, ♀. Piedmont, April and May 1869 (*Count Salvadori*). *i*, ♂. Malta, September. *k*, ♀. Malta, October (*C. A. Wright*). *l*, ♂. September 14th, 1869. *m*, ♂. September 9th, 1871. *n*, ♂. October 6th, 1871, Ortakeuy, Turkey (*Robson*). *o*, ♀. Crimea (*Whitely*).

E. Mus. Howard Saunders.

a, ♂. Cookham, Berks, September 2nd (*R. B. Sharpe*). *b*, ♂. Generalife, Granada, October 10th. *c*, ♀. Malaga, October 8th. *d*, ♂. Seville, December 4th. *e*, ♂. Malaga, January 2nd (*H. S.*). *f*, ♂ *im.* (*assuming black head*). Valencia, April 8th, 1872 (*Martin*).

E Mus. C. A. Wright.

a, ♂. Malta, December 27th, 1862. *b*, ♂. Malta, February 8th, 1870 (*C. A. W.*).



J.G. Keulemans lith

M & N Hanhart imp

GARDEN WARBLER.
SYLVIA SALICARIA.

SYLVIA SALICARIA.

(GARDEN-WARBLER.)

Motacilla salicaria, Linn. Syst. Nat. i. p. 330 (1766).*Motacilla hortensis*, Gmel. Syst. Nat. i. p. 955 (1788).*Sylvia hortensis* (Gm.), Lath. Ind. Orn. ii. p. 507 (1790).*Curruca hortensis* (Gm.), Koch, Baier. Zool. i. p. 155 (1816).? *Sylvia ædonia*, Vieill. Nouv. Dict. xi. p. 162 (1817).*Epilais*, Kaup (*Sylvia hortensis*, Lath.), Natürl. Syst. p. 145 (1829).*Curruca brachyrhynchos*, C. L. Brehm, Vög. Deutschl. p. 416 (1831).*Curruca grisea*, C. L. Brehm, op. cit. p. 416 (1831).*Adornis hortensis* (Gm.), G. R. Gray, List of Gen. of Birds, p. 29 (1841).*Sylvia salicaria* (L.), Newton in Yarr. Brit. B. ed. 4, i. p. 414 (1873).

Fauvette des Jardins, French; *Beccafico*, Italian; *Beccafik*, Maltese; *Garten-Grasmücke*, *grauer Nachtigall*, German; *Tuinfluiter*, Dutch; *Havesanger*, *Havesmutte*, Danish; *Havesanger*, Norwegian; *Häcksångare*, Swedish; *Lehtokerttu*, Finnish; *Travnik*, Russian.

Figuræ notabiles.

D'Aubenton, Pl. Enl. 579. fig. 2; Werner, Atlas, *Insectivores*, pl. 41; Kjærb. Orn. Dan. taf. 20; Fritsch, Vög. Eur. taf. 24. fig. 8; Naumann, Vög. Deutschl. taf. 78. fig. 3; Sundevall, Svensk. Fogl. pl. 13. fig. 7; Gould, B. of Eur. pl. 121; id. B. of G. Brit. ii. pl. 62; Schlegel, Vog. Nederl. pl. 69.

♂ *ad.* suprâ cinereo-fuscus vix olivaceo tinctus: palpebris albis, remigibus et caudâ saturatoribus: subtus albus, gutture et pectore cervino lavatis: hypochondriis pallidè fusco-albidis, subalaribus pallidè cervinis: rostro corneo-fusco, mandibulâ ad basin rufescenti-albidâ: iride fuscâ: pedibus plumbeis.

Juv. adulto similis sed corpore suprâ magis olivaceo, corpore subtus flavido tincto.

Adult Male (Christiania, Norway). Upper parts generally uniform hair-brown, the wings and tail rather darker than the rest of the upper parts, the latter uniform in colour without any light edgings to the outer rectrices; chin, throat, and entire underparts white, the throat and breast slightly washed with buff, and the flanks washed with light brown; eyelids dull white; under wing-coverts delicate buff; bill stout and short, dull lead-brown in colour, but dark brown along the ridge and towards the point, the base of the lower mandible reddish white; iris dark brown; legs lead-coloured, the soles yellowish. Total length about 5·5 inches, culmen 0·45, wing 3·12, tail 2·32, tarsus 0·8; the first primary longer than the third, but the second is the longest.

Female (Christiania). Scarcely differs from the male in coloration, the underparts being a trifle whiter, and the under wing-coverts a shade paler.

Young. Upper parts darker with a greenish tinge, and the underparts tinged with yellowish; but otherwise the plumage is as in the adult bird.

THE range of the Garden-Warbler is somewhat restricted ; for it does not appear to inhabit Asia east of the Ural, though in Europe it is generally distributed during the summer season up to 69° N. lat., retiring southward for the winter, at which season it penetrates tolerably far to the south in Africa.

In Great Britain it is found throughout England, is rare in Wales and Ireland, but is pretty generally distributed in Scotland as far north as Banffshire. Mr. A. G. More says that it breeds throughout England, but is scarce in Cornwall and Pembrokeshire, and he has no authority for its breeding in North Wales; and Mr. Cecil Smith informs me that near Taunton, in Somerset, it is a regular though not very common summer migrant, but in other parts of the county it is more common. Mr. Stevenson speaks of it as being local and nowhere very numerous in Norfolk, where it arrives later than the Blackcap, and leaves again in September; and Mr. Metcalfe informs me that in the lake-districts of Cumberland it is much less numerous than the Blackcap, but may be heard throughout the summer in Spindlewood, near Kendal, and in several other localities of the neighbourhood. Mr. J. H. Gurney, jun., informs me that it is fairly common in Durham in suitable localities, such as Castle Eden, but he scarcely considers it as numerous as the Blackcap.

In Scotland it is said by Selby to be found over the greater part of the country; but Mr. Robert Gray does not consider that it is commonly distributed. Mr. Sinclair, he says, has observed it at Inverkip, in Renfrewshire; and Dr. Saxby states (B. of Shetl. p. 73) that it is a rare autumn visitor to Shetland, usually occurring in September, but, as far as he is aware, it has not yet been observed in Orkney. In Ireland, Thompson says, it is extremely rare, but it has bred in the county Tipperary; and Templeton records it also as having bred at Cranmore, near Belfast. Mr. Harting says that he has seen it in the county Wicklow, that Mr. Blake-Knox has met with it in the county Dublin, and that, according to Sir Victor Brooke, it is common and breeds regularly about Lough Erne.

In Scandinavia it is tolerably common. Mr. Collett informs me that it is generally distributed throughout Norway up to the Arctic circle, but above that it is rarer. In June 1872 he found it in the Maalselvedale, near Tromsö, in $69^{\circ} 20'$ N. lat., and he believes that it is also found at Alten. In Southern Norway it is common both in the interior and towards the coast, arriving about the middle of May and leaving in September; and on the fell-sides it occasionally ranges up into the birch region. Professor Sundevall speaks of it as being found throughout Sweden up into Lapland, and adds that it has been met with as far north as Quickjock, in 67° N. lat.; but Professor Newton mentions that he was informed by Dr. Malmgren that in Finland it has only in one instance been observed as far north as 65° N. lat. When in that country I used to hear it in the southern districts, where I believe it is not uncommon. Mr. Sabanäeff informs me that it is common in Central Russia, and that he met with it in the Ural up to 59° N. lat.; but it is certainly generally distributed as far north as Archangel, near which town it is common. Throughout the whole of the Baltic provinces and North Germany it is common, and generally distributed in suitable localities; and Mr. Benzon informs me that it is certainly the commonest Warbler in Denmark during the summer season, arriving late in May. In Holland, Mr. Labouchere informs me, it arrives in May and leaves in September, and breeds everywhere in gardens, small groves, and even in the parks and squares of Amsterdam and other cities. It

arrives in Belgium and France as early as the end of April, and during the summer is numerous and very generally distributed, especially in the northern and western provinces of France. Common in Portugal, it is also found in Spain; and Colonel Irby says that it usually arrives at Gibraltar about the middle of April, and he saw the last on the 7th October. It nests in the cork-wood of Gibraltar, laying about the 10th of May; and, in a note just received, he informs me that it is very numerous in the province of Santander in May and June. Bailly says that in Savoy it is rarely met with above an altitude of from 1400 to 1500 metres, but below that it is numerous from the end of April to the early autumn; and in Italy, according to Salvadori, it is very numerous in August and September, but is comparatively rare on the spring migration, and is not known to nest below Lombardy; but Doderlein says that a few pairs breed in the district of Modena. It occurs in Sicily on passage, being abundant in autumn; and though it does not appear to have been obtained in Sardinia, it probably visits that island. Mr. C. A. Wright says that in April and again in the middle of August and in September flocks of the present species visit Malta on passage, and numbers are netted for the table, as many as a hundred dozen being sometimes brought in at a time. Lord Lilford found a nest of the Garden-Warbler containing eggs near Klimára, in Epirus, in May 1857, but did not observe it there on any other occasion; and Dr. Krüper says that it is only a migrant in Greece, neither remaining to breed nor winter there. It breeds, however, in Southern Germany; and the late Mr. E. Seidensacher informed me that he now and again found its nest near Cilli, in Styria; and Dr. Anton Fritsch says that it is common throughout Bohemia. It appears also to be by no means uncommon in the countries bordering the Danube; and Dr. Radde states that it is common in Southern Prussia, where it arrives late in April and leaves late in September. Dr. Krüper speaks of it as being merely a migrant in Asia Minor; but it breeds in Palestine. It does not appear to be common in North-east Africa; for Von Heuglin speaks of it as being a very rare spring visitant, and adds that he obtained an old female on the island of Roda, near Cairo. In North-west Africa, however, it is tolerably common; and Loche states that it is abundant about Algiers, though he does not say at what season of the year. Favier says that it is found near Tangier, on passage to Europe in April and May, returning in October, when it is nearly as plentiful as the common Whitethroat. Messrs. Shelley and Buckley shot one at Abouri, in West Africa, on the 27th of February; Riis obtained it at Aguapim; Andersson sent home two examples from Damaraland; and Wahlberg procured a pair in Caffraria between the 19th and 28th of November.

To the eastward it ranges scarcely beyond the Ural range; and it appears doubtful if it is met with as far east as Persia. De Filippi certainly records it as found by him in a garden at Tabriz, in Persia; but neither Mr. Blanford nor Major St. John ever met with it in that country, and the former gentleman points out that there is no specimen in De Filippi's collection at Turin.

The Garden-Warbler assimilates closely in habits to the Blackcap. It frequents woodlands where the undergrowth of weeds and brambles is dense, and gardens where there is good shelter, and where it is undisturbed. Though restless and active in its movements, seldom remaining long in one place, it is very secretive in its general habits, and is not a bird one often sees unless one knows just where to look for it and follows or watches for it carefully. With us

in England, as elsewhere in Northern and Central Europe, it is a summer migrant, arriving late in April or early in May, when the trees are bursting out into leaf; and, as is the case with most if not all of our summer visitants, the males arrive before the females. Its song is sweet, though somewhat wild and irregular; and though commenced in a low tone, it is gradually raised until it becomes loud, and is usually prolonged. It sings assiduously throughout the whole day. Its call-note is a harsh *tack, tack, tack*, rather deep in tone. It feeds on insects of various kinds, berries and fruit, and is fond of strawberries, cherries, plums, and other garden fruits; and in the south of Europe it is said to be very partial to figs: hence its Italian name "Beccafico;" for, so far as I could ascertain, the present species is the true "Beccafico," though I saw numbers of various kinds of small birds, including even Titmice and Greenfinches, sold in the Italian markets under that name. Herbert says that it feeds on the berries of the ivy, privet, elder, and berry; and Sweet that it is exceedingly partial to the larvæ and caterpillar of the common cabbage-butterfly; and it is, he adds, the only bird of the genus known to him that will feed on this destructive insect. Naumann says that in the autumn it feeds almost solely on berries; and Mr. Collett writes to me as follows:—"Amongst the berries on which this species feeds in the summer and autumn are those of the poisonous *Paris quadrifolia*. In the summer of 1860 I found a nest containing nearly fledged young of the Garden-Warbler, and I put them in a cage, allowing the old ones to feed them. Besides cherries and other berries, the parent birds brought many of *Paris*, of which an abundance grew all round. Some of these berries fell out of the cage on to the ground; but most were eaten by the young, whose droppings were strongly coloured by them; but they did not appear to disagree with them in the least, and I fed other birds also with these berries without any injury to them. Amongst others I gave to the young of the Blackcap, Whitethroat, and Robin these berries for food."

The nest of the Garden-Warbler is placed in a low bush, amongst dense herbage, or in a bramble thicket, and is rather lightly though tolerably firmly constructed of grass bents and a few rootlets intermixed with a little wool and moss, and lined with a little hair and fine roots. Naumann says that it seldom contains hair, and is very slightly constructed, so much so that after it is used it soon gets destroyed by the weather. Naumann adds that, from his own observations, extending over many years, it certainly only raises one brood in the season, but as it frequently forsakes its nest on very trifling grounds, and commences another, fresh eggs are not unfrequently found as late as the beginning of August. The eggs, four or five in number, are pale French-white with faint grey shell-patches, marbled and clouded with olivaceous brown, and to some extent spotted and speckled with deep brown. In size they measure from $\frac{2.8}{4.0}$ by $\frac{2.1}{4.0}$ inch to $\frac{3.5}{4.0}$ by $\frac{2.4}{4.0}$ inch.

Mr. Benzon informs me that in Denmark he has taken, not unfrequently, very light, almost white varieties, but that he has never found any tinged with rufous. The eggs of the present species can, he adds, be always distinguished from those of the Blackcap by being less glossy and having the greyish shell-markings, which are almost always wanting in those of the Blackcap; besides, the surface-spots are lighter in the eggs of the Garden-Warbler.

Mr. Metcalfe, of Kendal, sends me the following note on the present species:—"It arrives here seldom before the middle of May, and prefers groves and orchards; but it may be heard far more frequently than seen, as it loves to perch on the top of some tall tree embosomed by leaves,

or in the cover of a thicket-hedge, whence it cheers the traveller with its 'ineffably sweet' song. It is constantly in motion; and when hopping from twig to twig a close observer will notice that it always alights with a peculiar jerk of the body from one side to the other. I have for many years kept large numbers of Warblers in confinement, and have found the following the best staple food for nearly every species; for it admirably combines insects, worms, and frugivorous food, viz. three or four teaspoonfuls of dried ants' eggs soaked in boiling water for half an hour, after which the water has to be drained off; one ounce each of powdered rusks, hempseed, German paste, chopped cabbage, and grocers' currants chopped fine; two hard-boiled eggs, two figs, and one apple, all chopped very fine. The whole should be well mixed and carefully crumbled into the feeders. It will keep from moulding for three or four days, and need therefore only be made twice a week. I also not unfrequently give my birds rusks with boiling milk poured over them, and to my Nightingales a tin of scraped beef and egg; and this food I also give occasionally to my other Warblers. I now possess a Garden-Warbler which has been a boon companion of mine for four years; and a gayer, more sprightly bird I never had. I believe that this is an unusual age for a Garden-Warbler to attain in confinement."

The specimen figured is the one above described.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a, ♂, *b*, ♀. Christiania, Norway, June 16th, 1874 (*R. Collett*). *c*, *d*. Hampstead, Middlesex, May 20th, 1870 (*Davy*). *e*, ♀. Casa Vieja, Andalucia, May 8th, 1874 (*Col. Irby*). *f*. Genoa, September 1858 (*H. E. D.*). *g*, ♀. Ortakeuy, Turkey, September 17th, 1871 (*Robson*). *h*, ♂. Asia Minor, June 10th, 1868 (*Robson*).



BARRED WARBLER.

SYLVIA NISORIA

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SYLVIA NISORIA.

(BARRED WARBLER.)

Motacilla nisoria, Bechst. Naturg. Deutschl. iv. p. 580, pl. xvii. (1795).*Sylvia nisoria*, Bechst. Orn. Taschenb. i. p. 173 (1802).*Curruca nisoria* (Bechst.), Koch, Baier. Zool. i. p. 434 (1816).*Adophonus nisorius*, Kaup, Nat. Syst. p. 28 (1829).*Curruca undata*, C. L. Brehm, Vög. Deutschl. p. 414 (1831).*Curruca undulata*, C. L. Brehm, tom. cit. p. 415 (1831).*Nisoria undata*, Bp. Comp. List, p. 15. no. 111 (1838).*Adophoneus undatus* (Br.), L. Brehm, Naumannia, 1855, p. 283.*Adophoneus undulatus* (Br.), L. Brehm, ut suprâ.

Bröstvattrad sångare, Swedish; *Brystvatret Sanger*, Danish; *Sperbergräsmücke*, German; *Fauvette épervière*, French; *Calega padovana*, *Bigia striata*, Italian; *Slavka pestro-grudaya*, Russian.

Figuræ notabiles.

Werner, Atlas, *Insectivores*, pl. 36; Kjærbo. Orn. Dan. taf. xx., and suppl. taf. viii.; Fritsch, Vög. Eur. taf. 24. figs. 12–14; Naumann, Vög. Deutschl. taf. 76. figs. 1, 2; Sundevall, Sv. Fogl. taf. 13. figs. 3, 4.

♂ *ad.* corpore suprâ saturatè cinereo vix brunneo tincto, uropygio clariore, plumis in dorso imo et uropygio et scapularibus nonnullis albido apicatis et nigricante griseo versus apicem fasciatis: remigibus saturatè brunneis, secundariis et tectricibus alarum versus apicem saturationibus et conspicuè albo terminatis: rectricibus saturatè cinereis, rectrice extimâ in pogonio externo vix albo marginatâ, in pogonio interno versus apicem conspicuè albo marginatâ, reliquis (duabus centralibus exceptis) in pogonio interno albido terminatis: corpore subtùs albo, ubique saturatè cinereo fasciato: capite laterali et hypochondriis cinereo lavatis: rostro brunnescenti-corneo, mandibulâ ad basin flavicante: pedibus pallidè brunneis: iride flavâ.

♀ *ad.* mari similis, sed brunnescentior et corpore subtùs minus fasciato.

Juv. corpore suprâ brunnescenti-griseo, subtùs albus nec fasciatus: hypochondriis et pectore pallidè brunnescente cervino lavatis: remigibus et rectricibus brunnescentioribus quam in adulto, secundariis et tectricibus alarum brunnescente albido marginatis et apicatis.

Adult Male in summer (Stehag, Sweden, 28th May). Upper parts dark ashy grey, with a brownish tinge, feathers on the rump clearer in colour, those on the lower part of the back, rump, upper tail-coverts, and some of the scapulars tipped with white, and having a subterminal blackish grey band; quills dark brown; the secondaries and wing-coverts much darker towards the tip, and broadly tipped with white; tail dark ashy, the outermost rectrix on each side narrowly bordered with white on the outer

web, and with the inner web broadly margined with white on the terminal third, the remaining feathers, except the two central ones, more narrowly bordered with white on the inner web; sides of the head and neck greyish, throat white, these parts being conspicuously barred with very dark ashy grey; rest of the underparts white, conspicuously barred, especially on the flanks and under tail-coverts, with crescentic bands of dark ashy grey; flanks washed with grey; bill horn-brown, yellowish at the base of the lower mandible; legs yellowish, or pale brownish flesh-coloured; iris pale yellow. Total length $6\frac{1}{2}$ to 7 inches, culmen 0.65, wing 3.5, tail 2.95, tarsus 1.

Female (Shiraz, summer, 1870). Resembles the male, but is much browner and less barred on the underparts.

Young (Shiraz, Persia). Upper parts sandy grey, underparts white, on the flanks and to a slight extent on the breast washed with sandy buff; no bars either on the upper or underparts; wings browner than in the adult; and the secondaries and wing-coverts are edged and tipped with dull whity-brown; tail less marked with white and much browner in tinge of colour. A young bird from Genoa closely resembles this specimen, but is, if any thing, a trifle paler in colour.

THE Barred Warbler inhabits Central, Southern, and Eastern Europe, in the summer ranging up into portions of Northern Europe, and in the winter migrating southwards into Africa. It has not been met with in Great Britain or in Norway; but in Sweden it is found in the southern districts, where it is not rare; and Nilsson says that it breeds not uncommonly in the woods of Eastern and Central Skåne, Wram, Osby, Ljungby, &c., and in Blekinge, on Öland, and Gottland. It has been once observed in Finland, near Haminanlaks, by Mr. F. von Wright, on the 2nd June, 1836; and it occurs in Russia, but does not range far north. Mr. I. von Fischer says (J. f. O. 1872, p. 388) that it is common near St. Petersburg; Mr. Sabanäeff informs me that it breeds in the Government of Jaroslaf, but is rare; Eversmann says that it is not uncommon on the Central Volga and further southward; Bogdanoff met with it now and then in the Governments of Kazan and Simbirsk; and Kessler speaks of it as being not uncommon in the district of Kieff. Mr. Sabanäeff did not himself meet with it in the Ural, but says that Mr. Martin observed it near the Keshtemsky Zavod, and he thinks that it may range as far north as 57° N. lat. I have no information as to its occurrence in Poland, where it is doubtless found; but in Northern, and especially in North-eastern, Germany it is tolerably common. Borggreve says that Mecklenburg and Anhalt appear to be the western limits of its range, except that Brahts found it breeding near Neuwied. Mr. Schütt says (J. f. O. 1861, p. 235) that it is rare in Baden, but he saw a specimen in Heidelberg which had been killed in the Odenwald; and it has, he says, been met with near Carlsruhe. Mr. Pässler speaks of it as being extremely common in Anhalt in the meadows skirting the Elbe. It has, I may here name, been met with in Denmark. Kjarbölling found it breeding in Eastern Jutland; and Bonnez records it as breeding on Mols. It also breeds at Flensborg, at Ordrup, in Iceland, and on Lolland. Mr. Fischer met with it breeding on the west coast of Vendsyssel, and he found its nest at Birkelse Have in June 1862 and June 1865, and once, in June 1863, at Ulveskoven. At the first place the nest was placed in a young fir, and at the latter in a young birch. It has not been met with in Holland or Belgium; nor has it been met with in Northern France; but it visits the southern portions of that country during the two seasons of migration; Baron von Müller (J. f. O. 1856, p. 224)

speaks of it as being extremely rare in Provence. It is stated to occur at rare intervals in the neighbourhood of Perpignan; but I have not seen a specimen from any locality west of Nice, where an example, in Mr. Howard Saunders's collection, was obtained. It has not been recorded from Spain or Portugal. In Italy it is, according to Salvadori, rare, but less so in the Venetian and Veronese districts than elsewhere. It is of accidental occurrence in the Modena district. Professor Doderlein received one shot in 1870. It has not been obtained in Sardinia or Sicily, nor do either Von der Mühle or Lindermayer record it from Greece; but Mr. Seebohm informs me that it occurs there during migration. It is found, however, in Southern Germany; but, according to Dr. A. Fritsch, it is rare in Bohemia, but occurs regularly near Prague. Seiden-sacher informed me that it occurs regularly near Cilli, in Styria; and he sent me its eggs from there. He says that it arrives there early in May, and breeds not unfrequently close to the town of Cilli. Dr. O. Finsch says that it is not common in Bulgaria; and I never saw it when collecting on the Danube. I have several specimens from Turkey; and Mr. G. C. Taylor (*Ibis*, 1872, p. 229) "found it abundant in the spring of 1855 in the Crimea, near the camp." Professor von Nordmann says that it occurs in Southern Russia, where it takes up its abode every year in the large gardens which surround Odessa; and Mr. H. Goebel speaks of it (*J. f. O.* 1870, p. 449) as not being rare in the Uman district. Dr. Th. Krüper says that it occurs in Asia Minor in April, but is not common; indeed but few collectors have recorded it from that part of the Continent. It occurs in North-east Africa; and Von Heuglin (*Orn. N.-O. Afr.* p. 315) says that he only met with it rarely in October, and early in April in Nubia and Northern Sennaar, always singly in thorn-hedges and thickets along the Nile; and usually young birds were seen. In North-western Africa it does not appear to occur.

To the eastward its range extends as far as Persia and Turkestan. Severtzoff says that it is distributed throughout Turkestan during the breeding-season, but does not winter there. It breeds in the mountains at an altitude of from 6000 to 10,000 feet above the sea-level. In Persia Major St. John obtained two specimens from Shiraz, which Mr. Blanford says is the most eastern locality from which the present species has hitherto been recorded.

In its habits it appears to resemble the Garden Warbler or Blackcap. It affects thickets and low-lying districts, and is especially to be found in young growth intermixed with thorn-bushes, and also in willow-growth, being less frequently met with amongst conifer-growth and gardens, and is never seen in the heavy forest-growth; indeed Von der Mühle says that thorn-growth appears indispensable to its comfort. It is exceedingly shy, and hides itself in the densest thickets, being comparatively difficult to catch a glimpse of. It is never seen sitting still, but appears always moving about. If disturbed, or if it sees any thing strange, it raises the feathers on its head, jerks its tail, and utters a harsh note. It creeps about amongst the bushes, hopping about from twig to twig without using its wings. It is quarrelsome, and drives intruders from the vicinity of its nest. Its song is said to be loud, clear, and melodious; and Von der Mühle says that it is but little less musical than that of the Garden Warbler. It sings from early in the morning, except during the heat of the day, until late in the evening, and frequently sings when at some height in the air or fluttering from tree to tree. Its call-note is harsh; and it occasionally utters a peculiarly harsh sound like several other species of Warblers. One peculiarity in its song is a peculiar chattering call uttered at the commencement and end of its

song. It feeds, like the rest of the Warblers, chiefly, if not entirely, on insects. It breeds in the month of May, placing its nest in a tolerably high bush or near the ground. Mr. von Preen (J. f. O. 1859, p. 455) says that he took a nest on a birch tree at least twenty-five feet above the ground, and found another on the ground. The nest is cup-shaped, neatly constructed of dried grass or plant bents, often intermixed with spiders' webs and lined with horse-hairs; and the number of eggs deposited is usually from four to six, five appearing to be the usual complement.

The eggs are tolerably easily distinguishable from those of any other of our European Warblers. I have examples from Styria and Pomerania, some of which are of a peculiar pale creamy grey colour, with scarcely visible grey marblings, and others are indistinctly marked and marbled with pale purplish grey and pale brownish, on a creamy grey ground. In size they measure from $\frac{3.4}{4.0}$ by $\frac{2.4}{4.0}$ to $\frac{6.9}{8.0}$ by $\frac{5.2}{8.0}$ inch.

The specimens figured are an adult male from Sweden, in my collection, and a young female from Persia collected by Mr. Blanford, these being the specimens described.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a, ♂. Öland, July 8th, 1867 (*Meves*). *b*, ♂. Stehag, Sweden, May 23rd, 1868 (*Meves*). *c*, ♂. Moravia (*W. Schlüter*). *d*, ♂. Ortakeuy, Turkey, May 15th, 1869. *e*, ♂. Ortakeuy, May 9th, 1870 (*Robson*). *f*, ♂. Smyrna, April 22nd, 1872 (*Dr. Krüper*).

E Mus. E. Hargitt.

a, ♂. Moravia (*W. Schlüter*).

E Mus. Ind. Calc.

a, ♀. Shiraz, summer, 1870 (*Blanford*). *b*, ♀. Shiraz, summer, 1870 (*Blanford*).

E Mus. Howard Saunders.

a, ♂ *juv.* Syria (*Verreaux*). *b*, *juv.* Savoy. *c*, ♂. Karatau, Central Asia, May 11th, 1866 (*Severtzoff*).

E Mus. H. B. Tristram.

a, ♀. Wady Kelt, Palestine, April 27th, 1864. *b*, ♂. Gennesareth, April 28th, 1864 (*H. B. T.*).

Genus MELIZOPHILUS.

- Motacilla* apud Boddaert, Tabl. des Pl. Enl. p. 40 (1783).
Sylvia apud Latham, Ind. Orn. ii. p. 517 (1790).
Melizophilus, Leach, Syst. Cat. M. & B. Brit. Mus. p. 25 (1816).
Curruca apud Boie, Isis, 1822, p. 553.
Thamnodus apud Kaup, Natürl. Syst. p. 110 (1829).
Ficedula apud Blyth in Rennie's Field Nat. i. p. 310 (1833).
Malurus apud Selby, Cat. Gen. B. p. 10 (1840).
Pyrophthalma apud Bonaparte, p Cat. Ucc. Eur. p. 37 (1842).
Dumeticola apud Von Homeyer, J. f. O. 1863, p. 88.

THOUGH very closely allied to some of the species included in the genus *Sylvia*, the Dartford Warbler and its close ally *Melizophilus sardus* have very generally been kept apart in a separate genus; and they differ so much in general appearance that there appears to be good reason for so doing. Only the two above-named species are included in this genus, and they are both resident in the Palæarctic Region, one also being met with in the northern portion of the Ethiopian Region. These birds frequent open bush-covered places, especially large commons overgrown with furze, where they may be seen flitting from twig to twig. They are extremely active and restless, and at the same time shy, seeking refuge amongst the dense cover at the least approach of danger. They feed almost exclusively on insects of various kinds, which they obtain chiefly amongst the bushes; but they also capture insects on the wing, like the Flycatchers. The nest, which is cup-shaped and tolerably well constructed, is placed on a branch of a bush; and the eggs are spotted and finely blotched on a greyish ground with olive-brown or reddish brown. They are only moderately good songsters, but are in song until late in the season.

Melizophilus undatus, the type of the genus, has the beak rather long, somewhat broad at the base, the upper mandible decurved towards the tip; nostrils basal, longitudinal, situated in a long depression; gape furnished with a few long bristles; eyelids bare and prominent; wings short, scarcely reaching beyond the base of the tail, first quill longer than the coverts, the fourth and fifth longest; tail long and graduated; general plumage rather lax; tarsus strong, longer than the middle toe, covered in front with four plates and three inferior scutellæ; claws moderately strong, the outer and inner toes nearly equal.



DARTFORD WARBLER.
MELIZOPHILUS UNDPATUS

MELIZOPHILUS UNDATUS.

(DARTFORD WARBLER.)

- Le Pitte-chou de Provence*, D'Aubent. Pl. Enl. 655. fig. 1 (1770).
Dartford Warbler, Penn. Brit. Zool. ed. 4, i. p. 329, pl. 56 (1776).
Le Pitchou, Buff. Hist. Nat. Ois. v. p. 158 (1778).
Motacilla undata, Bodd. Tabl. des Pl. Enl. p. 40 (1783, ex D'Aub.).
Motacilla provincialis, Gmel. Syst. Nat. i. p. 958 (1788, ex Buff.).
Sylvia dartfordiensis, Lath. Ind. Orn. ii. p. 517 (1790).
Melizophilus dartfordiensis (Lath.), Leach, Syst. Cat. M. & B. Brit. Mus. p. 25 (1816).
Sylvia ferruginea, Vieill. Nouv. Dict. xi. p. 209 (1817).
Curruca provincialis (Gm.), Boie, Isis, 1822, p. 553.
Thamnodus provincialis (Gm.), Kaup, Natürl. Syst. p. 110 (1829).
Ficedula ulicicola, Blyth in Rennie's Field Nat. i. p. 310 (1833).
Melizophilus provincialis (Gm.), Jenyns, Man. Brit. Vert. An. p. 112 (1835).
Sylvia provincialis (Gm.), Keys. & Blas. Wirbelth. Eur. p. 57 (1840).
Malurus provincialis (Gm.), Selby, Cat. Gen. Birds, p. 10 (1840).
Sylvia undata (Bodd.), G. R. Gray, Gen. of Birds, i. p. 174 (1849).
Melizophilus undata (Bodd.), G. R. Gray, Hand-list of B. i. p. 212 (1869).
Melizophilus undatus (Bodd.), Newton in Yarr. Brit. B. ed. 4, i. p. 398 (1873).

Pitchou Provençal, French; *Colorin*, *Caganchina*, Spanish; *Magnanina*, Italian.

Figuræ notabiles.

D'Aubenton, Pl. Enl. 655. fig. 1; Werner, Atlas, *Insectivores*, pl. 45; Gould, B. of Eur. pl. 129; id. B. of G. Brit. ii. pl. lx.; Roux, Orn. Prov. pl. 219.

♂ *ad.* suprâ cinerescenti-niger, pileo schistaceo lavato et dorso brunnescentiore: remigibus et tectricibus alarum nigro fuscis, extûs pallidiore marginatis, margine alæ albo: caudâ nigro-fuscâ, rectrice extimâ utrinque extûs versus apicem albido marginatâ et apicatâ, reliquis pallidè brunneo apicatis: capitis lateribus schistaceo-cinereis, gulâ, gutture et pectore cum hypochondriis lætè castaneis, abdomine centrali albo, subalaribus et subcaudalibus schistaceo-cinereis: rostro nigro, ad basin mandibulæ pallidè flavo: iride saturatè flavâ: pedibus rufescenti-brunneis.

♀ *ad.* mari similis sed corpore suprâ sordidiore et brunnescentiore et corpore subtûs pallidiore et sordidiore.

Adult Male (Surrey). Upper parts blackish grey; the crown with a slaty tinge, and the back somewhat brownish; quills and wing-coverts blackish brown, with lighter brown edges; edge of the wing between the carpus and the spurious wing-feathers white; tail blackish, the outer rectrix with the terminal portion of the outer web broadly edged with dirty white, and tipped with the same colour, the remaining feathers slightly tipped with brownish grey; sides of the head greyish slate, paler than

the crown; throat, breast, and flanks rich chestnut-red, the feathers on the throat marked with silvery grey, centre of the abdomen white; under wing-coverts and under tail-coverts slate-grey; bill blackish, the base of the lower mandible pale yellow; iris rich orange-yellow, edge of the eyelids bright yellow; legs reddish brown. Total length about 5 inches, culmen 0·5, wing 2·1, tail 2·7, tarsus 0·75, second quill equal to the seventh, the third equal to the sixth. Tail graduated, the outer feathers being about 0·45 inch shorter than the central ones.

Female (Surrey). Similar to the male, but the upper parts are browner and duller, and the red on the underparts is much paler and duller.

Young (Portugal, May). Upper parts as in the female, but darker; wings and tail as in the adult, but the edgings to the quills are of a deeper brown; underparts dull grey, much intermixed or washed with yellowish buff, the breast and abdomen being almost entirely of this latter colour; eyelids and legs yellowish; iris pale yellowish brown.

THE range of the Dartford Warbler (or Furze-Wren, as it is also very aptly called) is somewhat peculiar; for it is met with in Western Europe as far north as our British Isles; whereas in the remainder of our continent it is only a southern species, not occurring in Germany at all. It is also met with in North Africa, being rare in the eastern part, but more numerous in the west, where it breeds.

In Great Britain it is a tolerably common species, but inhabits only the southern portions of England, where it is local, and does not occur in either Scotland or Ireland. Except in Middlesex, it does not seem to breed further north than the Thames; but it is not uncommon on the large heaths and commons in Kent, Surrey, Sussex, Hampshire, Dorset, Wilts, Devon, and Cornwall. Occasionally also, Professor Newton writes (Yarr. Brit. B. i. p. 399), "it strays further, and is recorded as having been met with in the counties of Oxford, Worcester, Leicester, and Derby—a pair shot, in the winter of 1840, at Melbourne in the county last named, and noticed by Mr. Briggs (Zool. p. 2486), having attained the most northerly limit known for the species in England; as a straggler, also, it has occurred in Cambridgeshire, Suffolk, and Norfolk." In the last-named county it has, Mr. Stevenson says, only twice been obtained, on both occasions near Yarmouth.

It does not inhabit Scandinavia, Germany, Holland, or Belgium, but is a resident in France, where, according to Messrs. Degland and Gerbe, it is found in Dauphiné, Anjou, Brittany, and especially in Finistère, where it is resident, and in the northern provinces is seen as an occasional straggler. In Provence and the south of France generally it is resident; but, according to Messrs. Jaubert and Barthélemy-Lapommeraye, it breeds only in a narrow belt along the coast from the Pyrenees to the gardens of Nice. It is a resident in Portugal, whence I have specimens collected by Dr. E. Rey, who writes (J. f. O. 1872, p. 148) as follows:—"I only observed one pair in Estremadura; but in Algarve it was one of the commonest Warblers. I first observed fledged young on the 21st April." In Spain it is, Colonel Irby states, "resident, and not uncommon in all the scrub-covered hills on the coast near Gibraltar, particularly about San Roque, but is most abundant during the breeding-season on the sides of the sierras, nesting in the heather about the 8th of April, on which date Mr. Stark found a nest near Algeciras with three eggs. There is no doubt they nest at Gibraltar, as they occasionally remain there through

the summer." I am also indebted to Mr. A. C. Stark for the following note:—"This bird breeds abundantly on the mountains at the back of Algeciras, Andalucia, at a height of from 1000 to 3000 feet. Three nests that I found were in the same situation, viz. low down between the stems of the tall heather. On 10th May I shot a female off three fresh eggs." In Italy, Salvadori says, it is resident in Liguria, Tuscany, the Roman States, Sardinia, Naples, and Sicily, especially in the southern portions, and is of accidental occurrence in the Veronese Territory. Malherbe says that it is not common in Sicily, and nests in the vicinity of Catania and Palermo. Mr. A. B. Brooke writes (*Ibis*, 1873, p. 243) that in Sardinia it is common in the low hills covered with cistus, heather, &c., but not so numerous as *M. sardus*. It is said to occur in Corsica; and Schembri includes it in his list of the birds of Malta on the strength of the capture of a single specimen. In Greece it appears to be very rare; for Dr. Krüper informs me that he never met with it, though both Lindermayer and Von der Mühle include it. I find no reliable record of its occurrence in Asia Minor, though Professor Newton says that it is stated to be found there; but Canon Tristram met with it in Palestine, frequenting the bushes in the most barren portions of the country; and it also occurs in North-east Africa, where Captain Shelley did not meet with it; but Dr. Th. von Heuglin says that it is very rare in Lower Egypt, where it appears with the subalpine Warbler and Rüppell's Warbler between the 20th and 25th March. In North-west Africa it is said to be commoner. Canon Tristram, who met with it in Algeria, writes (*Ibis*, 1859, p. 418) that it is "abundant in winter in the dayats, but never approaching the oases or the habitations of man. I do not believe that it is sedentary in the Sahara, but retires to the mountains to breed. I have taken several nests in the Atlas in the months of May and June." Mr. C. F. Tyrwhitt-Drake records it as being common in Morocco; and, according to Colonel Irby, Favier states that it "is resident, but not abundant, near Tangier. Some migrate to Europe in March, to return in August. It is solitary in habits. They make a clumsy nest of grass and roots, lined with very fine coils of palmetto fibre, laying in April."

In habits the present species is extremely active and restless. It is most frequently met with on the large furze-covered commons which still exist in many parts of Southern England; and though by no means uncommon in some of these open spaces, it is extremely hard to obtain, because of its shyness and its fondness for keeping close to the densest thickets of gorse. It will, when undisturbed, flit from bush to bush with a peculiar jerky flight, now and then uttering its short song whilst perched on the topmost spray of a furze bush, now flitting after an insect; but at the first sign of danger it drops down into the dense brushwood, and creeps through like a mouse, only appearing for a moment at the intervening open spaces; and even if one should be shot it is no easy task to find it. The call-note, which is usually uttered when the bird is quietly perched on the top of a bush, or when it pauses for a second whilst flitting about, is a harsh *cha, cha*, and is often accompanied by somewhat droll gesticulations. During the summer season the Dartford Warblers are scattered somewhat sparingly over the commons; but in the autumn they are said to collect and remain together during the winter; and, as stated by Professor Newton, Mr. Bury has noticed when shooting in the Isle of Wight in winter that they are constantly driven up from the turnip-fields before the dogs.

An anonymous writer, who published some excellent ornithological information under the name of "Rusticus," gives (*Mag. Nat. Hist.* vi. p. 112, 1833) a few notes on the present species,

which being, as I know from personal observation, most truthful, I make no apology for transcribing as follows:—"If you have ever watched a common Wren you must have observed that she cocked her tail bolt upright, strained her little beak at right angles, and her throat in the same fashion to make the most of her fizgig of a song, and kept on jumping and jerking and pushing about for all the world as if she were worked by steam; well, that's the precise character of the Dartford Warbler, or, as we call it, the Furze-Wren. When the leaves are off the trees, and the chill winter winds have driven the summer birds to the olive-gardens of Spain or across the Straits, the Furze-Wren is in the height of his enjoyment. I have seen them by dozens skipping about the furze, lighting for a moment upon the very point of the sprigs, and instantly diving out of sight again, singing out their angry impatient ditty, for ever the same. Perched on the outside of a good tall nag, and riding quietly along the outside, while the foxhounds have been drawing the furze-fields, I have seen the tops of the furze quite alive with these birds. They are, however, very hard to shoot, darting down directly they see the flash or hear the cap crack, I don't know which. I have seen excellent shots miss them while rabbit-shooting with beagles. They prefer those places where the furze is very thick, high, and difficult to get in."

The food of the present species would appear to consist entirely, or nearly so, of small insects of various kinds; but it is well possible that during the winter season it may vary its food somewhat, especially as insects are then more difficult to procure; and Mr. Blyth states that it will eat blackberries. Mr. G. Dawson Rowley surmises that it may probably dig in the ground in search of food when insects are scarce above ground. This gentleman writes (*Ibis*, 1859, p. 329) as follows:—"On the 6th of April, 1859, I saw a cock lately killed: the beak of this specimen was quite denuded of feathers on the under mandible, in the manner of the Rook, to which it bore a strong resemblance. Mr. Swaysland and I compared the beak with that of one killed the previous autumn: this was well clothed; and we could only explain the circumstance by supposing the bird to dig in the ground as does the Rook; during frost the earth would be soft at the roots of the furze. I am told that this appearance of the under mandible is common to specimens killed in spring."

The nest of the Dartford Warbler is said by Montagu to resemble that of the Lesser Whitethroat, being built of the same materials, and, like that, rather slightly constructed. I received many nests with eggs from Hampshire, all taken late in June, which reminded me somewhat of the nest of the Lesser Whitethroat; but, as a rule, they were more strongly built and rather better finished, though they varied a good deal in finish and compactness of structure, some being quite compactly and firmly built, whilst others were much more slight. I possess a good series of eggs of this bird, which are French white, or white with a dull greenish tinge, and the markings are lighter or darker hair-brown or greenish brown; some of the eggs are very closely spotted all over the surface of the shell, whereas others are only sparingly spotted, except at the larger end, where the markings are almost confluent. In size they average about $\frac{26}{40}$ by $\frac{1}{2}$ inch.

The first naturalist who discovered the nest of this Warbler, and published an account of its nidification, as well of its habits in confinement as observed by him, was Montagu, whose notes, though published nearly seventy years ago, have certainly not been excelled by any later

writer. This gentleman wrote (Trans. Linn. Soc. ix. p. 191) as follows:—"I visited a large furze-common in my neighbourhood, and where I had seen several the preceding autumn; and upon close search on the 16th July three pairs of old birds were observed, two of which had young evidently, by their extreme clamour, and by frequently appearing with food in their bills. On the 17th my researches were renewed; and after three hours' watching the motions of another pair, I discovered the nest with three young; it was placed amongst the dead branches of the thickest furze, about two feet from the ground, slightly fastened between the main stems, not in a fork. On the same day a pair were observed to be busied carrying materials for building; and by concealing myself in the bushes I soon discovered the place of nidification, and, upon examination, found the nest was just begun. As early as the 19th the nest appeared to be finished; but it possessed only one egg on the 21st, and on the 26th it contained four, when the nest and eggs were secured.

"The nest is composed of dry vegetable stalks, particularly goose-grass, mixed with the tender dead branches of furze, not sufficiently hardened to become prickly; these are put together in a very loose manner, and intermixed very sparingly with wool. In one of the nests was a single Partridge's feather. The lining is equally sparing; for it consists only of a few dry stalks of some fine species of *Carex*, without a single leaf of the plant, and only two or three of the panicles. This thin flimsy structure, which the eye pervades in all parts, much resembles the nest of the White-throat." The young birds Montagu took from the nest and kept in confinement. "Before they left the nest," he writes, "I put them into a pair of scales, and found that they weighed about two drams and a quarter each. At this time they ate in one day about one dram and a quarter each; so that in two days each consumed more than its own weight. Such a repletion is almost incredible, and doubtless greatly beyond what the parent birds could usually supply them with, which by observation appeared to consist of variety, and not unfrequently small *Phalænæ*; their growth, however, was in proportion to the large supply of food. The nestling attachment of these little birds was very conspicuous towards the dusk of the evening; for a long time after they had forsaken the nest they became restless and apparently in search of a roosting-place, flying about the cage for half an hour, or until it was too dark to move with safety, when a singular soft note was uttered by one which had chosen a convenient spot for the night, at which instant they all assembled, repeating the same plaintive cry. In this interesting scene, as warmth was the object of all, a considerable bustle ensued, in order to obtain an inward berth, those on the outside alternately perching upon the others and forcing in between them. During this confusion, which sometimes continued for a few minutes, the cuddling-note was continually emitted, and in an instant all was quiet.

"Nothing can exceed the activity of these little creatures; they are in perpetual motion the whole day, throwing themselves into various attitudes and gesticulations, erecting the crest and tail at intervals, accompanied by a double or triple cry, which seems to express the words *cha, cha, cha*. They frequently take their food while suspended to the wires with their heads downwards, and not unusually turn over backwards on the perch. The males, of which there were three out of the four, began to sing with the appearance of the mature feathers, and continued in song all the month of October, frequently with scarcely any intermission for several hours together. The notes are entirely native, consisting of considerable variety, delivered in a hurried

manner, and in a much lower tone than I have heard the old birds in their natural haunts. This song is different from any thing of the kind I ever heard, but in part resembles most that of the Stone-Chat. The Dartford Warbler, like the White-throat, will sometimes suspend itself on wing over the furze, singing the whole time, but is more frequently observed on the uppermost spray in vocal strain for half an hour together."

The specimens figured are the adult male and the young bird above described, the former being from Surrey, and the latter from Portugal.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a, b, ♂ *ad.* Chert, Surrey, May (*Smither*). *c*, ♂, *d*, ♀. Surrey. *e*, ♀. Algarve, Portugal, April 1869. *f*, *juv.* Algarve, May 1869 (*Dr. E. Rey*).



LA MARMORA'S WARBLER.
MELIZOPHILUS SARDUS

MELIZOPHILUS SARDUS.

(MARMORA'S WARBLER.)

Sylvia sarda, Marm. Mem. Acc. Scienz. Torino, Aug. 1819, fide Temm. Man. d'Orn. i. p. 205 (1820).

Curruca sarda (Marm.), Boie, Isis, 1822, p. 553.

Pyrophthalma sarda (Marm.), Bp. Cat. Ucc. Eur. p. 37 (1842).

Melizophilus sarda (Marm.), Gerbe, Dict. Univ. d'Hist. Nat. xii. p. 113 (1848).

Dumeticola sarda (Marm.), A. von Homeyer, J. f. Orn. 1863, p. 88.

Melizophilus sardus (Marm.), Degl. & Gerbe, Orn. Eur. i. p. 492 (1867).

Pitchou sarde, French; *Magnanina sarda*, Italian.

Figuræ notabiles.

Temminck, Pl. Col. 24. fig. 2; Werner, Atlas, *Insectivores*, pl. 40; Gould, B. of Eur. pl. 127.

♂ *ad.* suprâ saturatè schistaceo-cinereus: pileo, loris et regione oculari nigricantibus: alis et caudâ nigro-fuscis, plumis extûs vix cinereo marginatis, rectrice extimâ utrinque in pogonio externo albo marginatis: gulâ, gutture, pectore et hypochondriis sordidè schistaceo-griseis, plumis nonnullis vix albido marginatis: abdomine albido lateraliter vix brunneo lavato: subcaudalibus albidis, centraliter griseo-schistaceo notatis: rostro saturatè corneo, ad basin mandibulæ flavido: iride fuscâ, marginibus palpebrarum rubris: pedibus flavo-fuscis.

♀ *ad.* mari similis sed brunnescentior et sordidior: gulâ et gutture ut in mare picturatis, sed plumis haud albido marginatis: corpore reliquo subtûs brunnescenti-griseo schistaceo tincto, vittâ in abdomine centrali albâ.

Adult Male (Sardinia, April). Upper parts dark slate-grey, becoming dull black on the crown and sides of the head, round the eye, and the loreal region; wings and tail blackish brown with light slate-grey narrow edgings to the feathers, the outer rectrix on each side edged externally with almost pure white; throat, upper breast, and flanks dull slate-grey, some of the feathers, especially on the chin, with whitish margins; abdomen dull white, on the sides slightly washed with brown; under tail-coverts whitish with dull slaty grey centres; bill dark horn, becoming yellow at the base of the lower mandible; iris brown, edge of the eyelid red; legs yellowish brown. Total length about 5 inches, culmen 0.4, wing 2.12, tail 2.45, tarsus 0.8.

Adult Female (Sardinia, April). Resembles the male, but has the upper parts browner and duller, and the underparts duller and more uniform, there being no white edgings to the feathers, and the entire underparts below the throat dull brownish grey with a slaty tinge, a spot in the centre of the abdomen alone being white.

Male in winter (Sardinia, February). Differs merely in having the upper parts less pure in colour, and the abdomen and lower flanks buffy brown in tinge, the centre of the abdomen, however, being almost white.

Young (Sardinia, 19th May). Upper parts dull ashy brown with a tinge of slate on the head; wings and tail as in the adult, but duller; underparts dirty greyish white; the breast and abdomen washed with warm buff. Compared with the young of *M. undatus*, which it otherwise somewhat resembles, it has the upper parts paler and browner, and the underparts very conspicuously paler and whiter, and lacks the rusty brown tinge.

THE range of this Warbler appears to be somewhat more extensive than was supposed some few years ago, when it was not known, except in the islands off the coast of Italy. It is, however, strictly a South-European form, and it is very doubtful if it has occurred on the shores south of the Mediterranean. It has been obtained as far north as Cape St. Vincent in Portugal, in which country it was, so far as I can ascertain, quite unknown previous to its being obtained there by Dr. E. Rey. This gentleman writes (*J. f. O.* 1872, p. 148) that he "found it tolerably common at Lagos and Sagres (Cape St. Vincent), and it can be at once distinguished from *M. provincialis* by its song." It has, however, not been met with in Spain, though it occurs in the Balearic Isles, where Mr. A. von Homeyer met with it near Andraix, and shot specimens; and he further states that it is very common on the hilly portions of Son Serre and Son Real, which were overgrown with *Pistacia lentiscus*, and was nearly as numerous there as on Dragonera. Mr. Howard Saunders states that he saw a specimen near Palma in Majorca, but failed to secure it. There does not appear to be any authentic instance of its occurrence on the mainland of France, though Vieillot says that it is found in Provence; and Salvadori expresses doubt respecting its occurrence in Liguria, inasmuch as De Negri, during many years he collected near Genoa, failed to obtain this species. It is, however, found in Sardinia, Sicily, and Corsica. In Sardinia it is said to be common and resident; but the different authors do not agree as to its habitat. Dr. A. Hansmann, in his article on the Warblers of Sardinia (*Naumannia*, 1857, p. 418), states that it is not rare, and invariably frequents the low spurs of the mountains in places where the cistus and thorn flourish luxuriantly, and never visits the plains or the valleys; but, on the other hand, it is sometimes found in the higher mountains on the edge of the forest, in low bushes intermixed with asphodel lilies. On the other hand, Mr. A. B. Brooke writes (*Ibis*, 1873, p. 242) as follows:—"This interesting little Warbler is very common on all the uncultivated parts of the plain, where the undercover (consisting chiefly of cistus) does not grow very tall or thick, but is scattered sparingly; and I have never seen them in the woods. They are, as far as my observations go, entirely confined to the plain, rarely, if ever wandering, even to the adjoining low hills, where their place seems to be taken by the Dartford Warbler. I have only on one occasion met with these two species on the same ground." In Sicily, Doderlein says, it arrives in April and May, and leaves in the autumn; but as he once obtained it in November, it is not improbable that it is in Sicily, as in Sardinia, a resident. Mr. C. Bygrave Wharton obtained several specimens near Ajaccio, in Corsica, last winter (1874-75); and, from what he tells me, it seems to be not uncommon there. Von der Mühle says that he several times saw it on the most southern point of the Maina, and shot one at Marathonisi, but never observed it elsewhere in Greece; and Messrs. Elwes and Buckley include it in their list of the birds of Turkey, without, however, giving any particulars. From Greece eastward I fail to trace it; but there appears some probability that it has been met with as far east as the peninsula of Sinai; for Mr. C. W. Wyatt writes (*Ibis*, 1870, p. 7) as follows:—"Near the embouchure of Wády Hebrán, where

there are some thick stunted bushes, I shot a pair of Marmora's Warbler, but unfortunately lost both of them on the bushes: they were only winged. I was, however, close enough to identify them, as, in trying to catch them, my hand was often within a foot of them. The beautiful red ring round the eye I saw very distinctly. I visited the same spot next day; but I never met with the bird again." I find no record of its occurrence in Africa beyond what is said by Loche, who speaks of one individual having been captured, but gives no particulars whatever as to where or when it was obtained.

The present species is said to resemble the Dartford Warbler most closely in habits, nidification, &c. Dr. A. Hansmann says (*l. c.*) that it frequents the dense bushes, in which it can easily hide. When it finds itself pursued it drops down into the dense thicket and slips along on or close to the ground, creeping with ease amongst the bushes, so that one can only now and again catch a hasty glimpse of it. When undisturbed it may be seen on the top of a bush singing; but the moment any movement excites its suspicions it utters a short note (*täk*) and dives down again. Mr. A. B. Brooke writes (*l. c.*) as follows:—" *M. sardus* is a bold little bird, often hopping and creeping about confidently within ten yards, trusting to escape observation by its diminutive size, dusky colour, and quiet unobtrusive habits. Their flight is feeble and wavy, rarely extending any distance; and on alighting it is often hard to see them again, as they creep off close to the ground along the stems of the cistus, and by the time the spot they disappeared in is reached they are thirty or forty yards off, perhaps in an opposite direction. They sing either perched on the top of the cistus or, frequently, in the air, jerking themselves down again into the bushes. Their song is very like that of the Dartford Warbler; but I do not think it quite so grating; their alarm-note is a single short tick, unmistakable when once heard." Herr A. von Homeyer states (*J. f. O.* 1863, p. 90) that its song is very characteristic. It consists, he writes, "of three portions, the first and third being a short not loud song, closely resembling that of *Sylvia melanocephala*, but lower in tone—the central portion being something like the song of *Sylvia garrula*, but not so loud, a clear *wedel, wedel, wedel, wedel, wedel, wedel, wedel*. When hopping through the bushes, a harsh call-note is uttered, like the syllables *schrani, schrani*, or *trim, trim*, which, when the bird is quiet, are uttered after short pauses, but when alarmed very rapidly."

Unfortunately I have been unsuccessful in my endeavours to procure the nest and eggs of this species. Dr. E. Rey says that its nest is usually placed in the azaleas (*A. pontica*), and much resembles that of the Dartford Warbler, but may always be distinguished by being lined with thistle-down. Dr. Hansmann, however, describes the nest somewhat differently. He writes (*l. c.*) as follows:—"The nest is usually placed in a dense thorn or myrtle bush, as the cistus is too open. It (the nest) is constructed of dried bents lined with horsehair and a feather or two; it is rather deep, and not very firmly constructed, resembling that of the Whitethroat. The eggs, four to five in number, are clouded with oil-greenish on a dirty greenish white ground, these cloudings sometimes becoming blotches; and in some there are red spots which have a bluish ash tinge, and a black spot or a scratch or two of black. In size they are about as large as those of the Goldfinch."

Like the other allied Warblers the present species feeds chiefly on insects of various kinds, though it varies its food according to the season of the year.

The specimens figured are an old male and a young bird, both from Sardinia, they being those above described.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a, ♂. Domus Novas, Sardinia, February 1873. *b*, ♂. Monte Preno, Sardinia, April 1863. *c*, ♀. Santa Barbara, Sardinia, April 17th, 1863 (*Salvadori*). *d*, ♀ *juv.* Sardinia, May 19th, 1871 (*A. B. Brooke*).

E Mus. Howard Saunders.

a, ♂. Villacidio, Sardinia, May 27th, 1871 (*A. B. Brooke*). *b*, ♀. Sardinia (*Salvadori*). *c*, *d*, ♀. Ajaccio, Corsica, December 1st, 1874 (*C. Bygrave Wharton*). *e*, ♀. Ajaccio, February 3rd, 1875 (*C. B. W.*).

Subfamily *PHYLLOSCOPINÆ*.Genus *REGULUS*.

Motacilla apud Linnæus, Syst. Nat. i. p. 338 (1766).

Sylvia apud Scopoli, Ann. I. Hist. Nat. p. 161 (1769).

Regulus, Koch, Baier. Zool. p. 199 (1816).

THOUGH tolerably closely allied to the Willow-Warblers in general appearance as well as in habits, the Goldencrests are in many respects not unlike the Tits, near which they have been placed by some authors. Like these birds they moult but once in the year, and they are only partial migrants; but they differ widely in their mode of nidification. They have, however, a slender bill like that of *Phylloscopus*, and very different from the stout bill of *Parus*. Unlike both *Phylloscopus* and *Parus*, both of which have the tarsus scutellated, *Regulus* has but one long anterior plate with three inferior scutellæ. In all the species found in the Palæarctic Region the centre of the crown in both sexes is yellow or orange-red. The Goldencrests are widely distributed throughout Europe, Asia, and North America, but do not range into the Ethiopian Region, as they are more especially inhabitants of the colder and temperate regions. They are essentially woodland birds, usually frequenting the trees, searching amongst their branches for their insect food. Their flight is rather weak; but they are partial migrants, and frequently traverse considerable distances. They are tolerably good songsters; and their song is often heard very early in the spring. They build tolerably large, deep, cup-shaped nests, which are suspended under the branch of a conifer tree, and deposit numerous small pinky white eggs slightly dotted with dull orange or pale red. Three species inhabit the Western Palæarctic Region; and two very closely allied species (*Regulus himalayensis* and *Regulus japonicus*) are found in the Eastern Palæarctic Region. One closely allied species (*Regulus satrapa*) inhabits the Nearctic Region, where also another species, the Ruby-crowned Kinglet, is found, which differs generically from true *Regulus* in lacking the peculiar feather which covers the nostril in that group, and has consequently been separated by Cabanis (J. f. O. 1853, p. 83) under the name of *Corthylio calendula*. This species has been included in the British list, but, so far as I can judge, without any valid reason.

Regulus cristatus, the type of the genus *Regulus*, has the bill slender, straight, much like that of the smaller *Phylloscopi*; but the nostrils, which are linear-oblong, are covered with a single delicate oblong feather; legs rather long, the tarsus longer than the middle toe, covered with a long slender plate and three scutellæ; the outer and middle toes joined at the base; claws long, curved, laterally grooved; plumage soft, blended; wings broad, rounded, having eighteen quills, the first not quite half as long as the second, the fourth longest, the fifth nearly as long; tail moderately long, slightly emarginate.



Mintern Bros imp

REGULUS CRISTATUS.
FEMALE AND YOUNG



1. FIRE-CRESTED WREN.
REGULUS IGNICAPILLUS
2. GOLDEN-CRESTED WREN.
REGULUS CRISTATUS

200.

REGULUS CRISTATUS.

(GOLDEN-CRESTED WREN.)

The Golden-crowned Wren, Edw. Nat. Hist. v. p. 95, pl. 254 (1758).*Motacilla regulus*, Linn. Syst. Nat. i. p. 338. no. 48 (1766).*Sylvia regulus*, Scop. Ann. I. Hist. Nat. p. 161 (1769).*Sylvia regulus*, Scop., Lath. Ind. Orn. ii. p. 548. no. 152 (1790).*Regulus cristatus*, Koch, Baier. Zool. p. 199 (1816).*Regulus aureo-capillus*, Meyer, Taschenb. deutsch. Vogelk. iii. p. 108 (1822).*Regulus crococephalus*, C. L. Brehm, Beitr. Vogelk. ii. p. 120 (1822).*Regulus flavicapillus*, Naumann, Vög. Deutschl. iii. p. 968 (1823).*Regulus septentrionalis*, C. L. Brehm, Vög. Deutschl. p. 479 (1831).*Regulus chrysocephalus*, C. L. Brehm, tom. cit. p. 481 (1831).*Regulus auricapillus*, Selby, Brit. Orn. i. p. 229 (1833).*Regulus vulgaris*, Flem. fide Bp. Consp. Gen. Av. i. p. 291 (1850).“*Regulus maderensis*, Harc.,” Bolle, Journ. für Orn. 1857, p. 284 (nec Vern. Harc.).“*Regulus himalayensis*, Blyth,” Jerdon, B. of India, ii. p. 206 (1863).*Regulus japonicus*, Bp. fide Swinhoe, P. Z. S. 1863, p. 336.

Golden-crested Wren, *Goldcrest*, English; *Roitelet ordinaire*, French; *Goldhähnchen, gelbköpfige Goldhähnchen*, German; *Regolo*, Italian; *het Goudhaantje*, Dutch; *Guultoppet-Fuglekonge, Stjernekonje*, Danish; *Fuglekonge*, Norwegian; *Kungsfogel*, Swedish; *Hippikerttunen*, Finnish; *Coroleok jeltovolosey*, Russian.

Figuræ notabiles.

Werner, Atlas, *Insectivores*, pl. 60; Kjærbo. Orn. Dan. taf. 24; Fritsch, Vög. Eur. taf. 19. figs. 5, 6; Naumann, Vög. Deutschl. taf. 93. figs. 1, 2, 3; Sundevall, Sv. Fogl. pl. xv. fig. 2; Gould, B. of Eur. pl. 148. fig. 1; id. B. of Asia, pt. xxi.; id. B. of G. Brit. ii. pl. lxix.; Bettoni, Ucc. Lomb. tav. 106.

♂ *ad.* fronte brunnescenti-griseâ, vertice croceo fasciâ nigrâ utrinque marginato: dorso et uropygio olivaceis, hâc virescente lavato, illo vix griseo adumbrato: remigibus nigricanti-fuscis, marginibus exterioribus (in quibusdam interruptis) virescenti-flavis, secundariis ad basin albis et eodem colore apicatis: rectricibus alarum conspicuè albido terminatis: rectricibus fuscis, extus flavo virescente marginatis: capite laterali cinerascanti-brunneo, loris et regione oculari brunnescenti-albidis: corpore subtus grisescenti-albido, abdomine centrali vix flavido lavato: rostro nigricanti-brunneo: iride fuscâ: pedibus brunneis.

♀ *ad.* mari similis, sed sordidiore et vertice luteo.

Pullus fœminæ similis sed vertice nigricanti-fusco olivaceo immixto, corpore subtus grisescentiore, abdomine imo et subcaudalibus cervino lavatis.

Adult Male (Altenkirchen, near Coblenz, 18th May). Forehead greyish brown; a blackish line above the forehead, merging into a tolerably broad black streak on each side of the head, enclosing a large yellow patch, which covers the crown, and in the centre deepens into rich orange; back and rump olive-green, the fore part of the back more grey, and the rump greener; quills dark blackish brown, on the outer web edged with yellowish green, the secondaries only thus edged on the terminal half, leaving a black patch at the base; secondaries and wing-coverts tipped, the latter broadly, with white; tail dark brown, the feathers bordered with yellowish green on the outer web; sides of the head greyish brown, palest round the eye, the lores being dirty greyish white; from the base of the bill an indistinct brownish line; underparts greyish white, very slightly marked with yellowish on the centre of the abdomen; bill blackish brown; iris hazel-brown; legs brown. Total length about 3·5 inches, culmen 0·45, wing 2·1, tail 1·65, tarsus 0·7.

Adult Female. Similar to the male, but rather duller in colour, and having the crown lemon-yellow, instead of orange-yellow, as in the male.

Young just fledged (Teneriffe, 23rd May). Differs from the female in having no yellow patch on the crown, the entire crown and nape being blackish brown intermixed with olive; the underparts are also much greyer, and the lower part of the abdomen and under tail-coverts are washed with buff.

THE Golden-crested Wren is very widely distributed, being found throughout Europe, North-western Africa, and in Asia as far east as Japan.

In Great Britain it is generally distributed throughout the country, breeding almost everywhere, excepting in the Outer Hebrides, Orkney, and Shetland; and though a resident throughout the whole year, large flocks are seen migrating to and from our coasts. Mr. Cecil Smith, writing from Taunton, Somersetshire, says that he does not believe that the migratory flocks ever find their way there, as he has never observed that the numbers are really increased in the autumn and winter.

Mr. Robert Gray remarks that though some sixty or seventy years ago it appears to have been a very scarce bird, it is now common in Scotland, and says that this "cannot be wondered at, considering that the numerous fir-plantations now beautifying the borders of our lakes and covering our hills with their tall green spires could hardly then have been in existence; but as these have increased in extent and become the chosen abode of Goldcrests during the breeding-season, the birds have multiplied greatly, and in many places are now permanently residents. Yet vast flocks appear to leave us in autumn. About the end of September they make their appearance in the Wigtownshire woods in great numbers, and gradually travel southwards till they get to the Mull of Galloway, where they linger until a fitting opportunity occurs for taking their departure."

Captain Feilden says that during its autumnal migration the present species appears not unfrequently to be blown on to the Færoe islands. Müller records them as having been procured in the month of October 1852, and in the same month in 1857, and on the 21st October 1867 he received a single specimen shot at Skaalefiord. The wind had for a long time previously been changing from southerly to westerly.

It is common in Scandinavia; but, according to Mr. Collett, it has not been found breeding north of Salten, in 67° N. lat. According to Nordvi several flocks were observed at Vadsö, in

East Finmark, on the 12th April, 1853, and the following days, and several individuals were even taken alive by the hand. Mr. Landmark found a nest in Smaalehnene on the 20th of May, 1872.

Sundevall (Sv. Fogl. p. 76) says that it is found throughout Scandinavia, excepting in the high fells, and in Swedish Lapland nearly as far north as the conifer-growth extends, probably, however, seldom ranging above the line of the fir-growth, or about 68° N. lat., though it may be found in one or the other suitable locality somewhat higher, as at Quickjock, whence Löwenhjelm records it. All do not appear to migrate southward in the winter, though all wander south of their summer-haunts, and a few are to be met with in Dalecarlia and near Stockholm in the winter. In Skåne it is a rare bird in the summer, but exceedingly common in the autumn. In Finland it is generally distributed, ranging as far north as the large conifer-forests are found; it occurs in the winter as far north as Kupio, though it probably moves southward during the coldest months of the year (January and February). Mr. von Wright observed it at Haminanlaks in December.

Mr. Sabanäeff says that it breeds more commonly in the Government of Jaroslaf than that of Moscow, and also occurs during summer in the Government of Tula. It sometimes winters in Central Russia. Tyzenhaus speaks of it as common in Lithuania. In the Ural, Mr. Sabanäeff informs me, its distribution is similar to that of *Parus ater*; but it is rarer on the south-eastern slopes of the Perm Ural, and does not breed in the pine-woods of the Kaslinsky and Keshtemsky dachas. It is common throughout Poland and Northern Germany at all seasons of the year, but in the western portion appears to be less common than the Fire-crested Wren. I found both species in Nassau; but the present species was much the rarer of the two.

Kjærbølling speaks of it as common in Denmark, where it is partly a resident and partly a migrant, or merely a wanderer during the seasons of migration; he says that there is no doubt that it breeds in that country. In Holland and Belgium it is common, and is equally common in Northern France, appearing, however, less so in the south. In Portugal it is said by Professor Barboza du Bocage to be rare; and in Southern Spain it is, according to Mr. Howard Saunders (Ibis, 1871, p. 207), "a regular winter resident, and may possibly be found throughout the year about the higher wooded districts;" he has "observed it near Granada in March, and in the pine-woods on the coast in February." But I have not obtained it from Gibraltar amongst the specimens sent home by Colonel Irby; and he tells me that he never saw it in Andalucia. It is found in Savoy and Italy; Salvadori speaks of it as being common in Northern Italy, and Doderlein as being found numerously in the Modenese Apennines. Mr. A. B. Brooke says that he never saw one in Sardinia; and both Cara and Salvadori agree in saying that it is commoner in the north than in the south of that island. In Sicily it is likewise abundant and partially resident, but is rather less common near Palermo than in other parts of the island. Mr. C. A. Wright says that "it appears to be a regular migrant to Malta in spring and autumn, and is most usually met with in the orange-groves for which the island is so famous." Lord Lilford found it common in the evergreen coverts of Epirus in winter; and it is found in Greece throughout the year. Linder-mayer speaks of it as frequenting the northern portions of Greece and Eubœa, in company with *R. ignicapillus*; and Mr. Seeböhm informs me that it "frequents the pine-region of the Parnassus during the breeding-season, and remains in Greece the whole year." Messrs. Elwes

and Buckley refer to it (Ibis, 1870, p. 198) as not uncommon in Turkey; and it is tolerably common in Southern Germany, where I have often observed it, and where it appears to be resident. Professor von Nordmann speaks of it as being abundant in the woods at the base of the mountains in the Crimea and the Caucasus, and visiting the gardens in the winter. Mr. Swinhoe writes (Ibis, 1864, p. 413) that a specimen came on board the steamer between Malta and Alexandria about 100 miles off the African coast; but it has not been recorded from North-eastern Africa, though it occurs in Algeria. Dr. C. Bolle mentions a Canarian species of *Regulus*, which was doubtless the present species, as Mr. F. DuCane Godman found it in the Canaries, at Taganana, and in the highlands of Teneriffe, in the laurel-forests, and also amongst the tree heath. He also says that it is "found in the eastern, central, and western groups of the Azores, and frequents the junipers (*Juniperus oxycedrus*) and tree heaths (*Erica azorica*) in the mountains, and is but seldom in the gardens or lower country." He says that his specimens have the beak and legs stouter and stronger, and the tail longer than European examples.

To the eastward it extends to Japan. Specimens have been sent from Trebizond; and Severtzoff states that it is resident throughout Turkestan, except in the south-western part, where it is wanting. In the winter it is found at an altitude of from 7000 to 8000 feet in the Karatau and Thian-Shan Mountains, and in the breeding-season is found as high as 10,000 feet above the sea-level. It also inhabits the North-western Himalayas, where, according to Dr. Jerdon, it is not common. Herr von Pelzeln records it from Kotegurh, and says that he has convinced himself that the European and Asiatic species are specifically identical, in which I fully agree with him. Von Schrenck met with it in Eastern Siberia; but Middendorff did not observe it. In the Amoor district it is, Von Schrenck says, a common bird, and he often saw and shot it near the Nikolaiefsk post in the autumn of 1854, and it remained there into November, but was not observed later. He says that specimens obtained there agree precisely with European examples. Pallas obtained a specimen from the Tschulym river, in Western Siberia. Père David obtained it at Moupin; Temminck and Schlegel record it from Japan, and Mr. Swinhoe from China. I may add that I have compared Chinese and Japanese examples with others obtained in Europe, and can detect no difference, except that the former are, if any thing, rather cleaner and a trifle brighter in colour.

In its habits the Golden-crested Wren bears not a little resemblance to the Titmice, and especially to the Coal Titmouse (*Parus ater*), with which species, as well as Creepers and other Titmice, it frequently roams about the country during the winter season. Both this species and the Fire-crested Wren are scarcely true migrants, as they are found during the winter in the same countries in which they have bred, except in high northern latitudes, but usually wander in search of food to some distance from the localities where they have bred. That numbers do migrate is certain, as during the seasons of passage large flocks have repeatedly been seen on the coast, often in an extremely fatigued condition; indeed it appears strange that so feeble and small a bird should be able to cross the sea as they certainly do. Many instances of its migration are given by various authors; and I may quote the following from Mr. Stevenson's 'Birds of Norfolk' (i. p. 136):—"Perhaps the most striking instance, however, of the migration of the Goldcrest in large numbers to our eastern coast was witnessed by Captain Longe, of Great

Yarmouth, on the morning of the 2nd of November, 1862. In a letter to myself at the time he says, 'As I was walking to Hemsly about 7.30, when it was just daylight, about half a mile out of Yarmouth, on the Caister Road, my attention was attracted to a small bush overhanging the marsh-dyke, which borders the pathway, by the continuous twittering of a small bird. On looking closely I found the bush, small as it was, literally covered with Golden-crested Wrens. There was hardly an inch of twig that had not a bird on it; and, even from my rough attempt at calculation at the time, I feel sure there were at least between two and three hundred. Most of them were either females or young birds, having a lemon-coloured crest; they were perfectly tame; and although I sat down on the other side of the ditch, within six feet, and watched them for some time, they did not attempt to fly away; but one or more would occasionally rise off its perch, and hover like a butterfly, and settle again in some other position. I went the next morning to look for them, but they were all gone. The wind had been easterly, with much fog.' Mr. Selby was, as named by Professor Newton in the new edition of Yarrell's 'British Birds,' the first to notice and call attention to the migration of this bird. Having already remarked, he says, "that at the end of October and beginning of November the bird suddenly became more abundant than the number produced in his own neighbourhood, in Northumberland, could account for, and that the same was the case along a great extent of the eastern coast of Scotland, he felt convinced that the fact was due to immigration from abroad. On the morning of October 26th, 1822, after a long and severe gale, beginning from the north-east, but veering to the east and south of east, he had the satisfaction of witnessing the arrival of an extraordinary flight, which he afterwards found was observed along the whole line of coast from beyond Berwick to Whitby." They were seen to arrive, he says, "by hundreds on the beach, so fatigued and overcome by the unfavourable change of wind, the length of their journey, or both combined, as to drop the moment they reached the land, unable to make any further exertions." As soon, he continues, as they were a little recovered from the effects of their distant flight they spread over the adjoining country, and at first filled every hedge and plantation; but their numbers rapidly decreased, and about Christmas scarcely more than the usual quantity remained. Soon after this they disappeared to a bird, and it was not till the following October that a single *Regulus* was visible in Northumberland. Mr. Blyth records a flock having been met with at sea off Whitby in October 1833; and in 1847 Mr. Robert Gray says (B. of W. of Scotl. p. 99) that "in the east of Scotland large flights of them make their appearance suddenly in April, and actually swarm in some parts of Haddingtonshire. I have seen them arrive at Dunbar about daybreak, and, immediately after reaching the shore, cling to the rocks and walls searching for insects. In such cases they were exceedingly tame after their long and fatiguing flight, and allowed me to get within a few paces. On one occasion I actually covered one with my hat. Having rested an hour or two till the following tide obliged them to shift to higher ground, they would then betake themselves to the nearest gardens, where they literally covered the trees.

"In autumn similar flights are observable coming from the surrounding country coastwards, and congregating in gardens as before. I recollect seeing a very large flock at this season in 1847. The little creatures took possession of a cabbage plot, and looked more liked a swarm of bees than a crowd of birds. On every plant there were half a dozen or more perched, some

busied in looking for insects, others bathing in the rain water which had collected on the broad leaves. I walked through the plot, and with a butterfly-net caught ten or twelve specimens. Some of these lived in confinement for a fortnight, and were supplied regularly with insects."

Mr. Cordeaux says that they appear on the east coast of England about the second or third week in October, preceding the Woodcocks by a few days, and have hence earned for themselves the soubriquet of the 'Woodcock Pilots.'

Exceedingly restless and active, the Golden-crested Wren is always in motion, fluttering from branch to branch, climbing about like a Coal Titmouse, every now and then emitting a shrill feeble note, aptly compared by Macgillivray to the cry of a Shrewmouse. It is not shy, but is not easy to discover amongst the dense foliage of the fir trees which it inhabits, and appears to pay but little attention to an intruder. In the winter season small or large flocks wander about in the woods and groves in search of food in company of Titmice and Creepers, with which they live in perfect amity. It places its nest in a similar position to that of the Fire-crested Wren; and indeed their nests are precisely alike both in form and mode of structure as well as materials; but the present species appears to make use of other trees besides the fir, as I have frequently found it breeding in yew trees. Its eggs, of which I have a large series from various parts of England and Germany, are, when blown, easily distinguishable from those of *Regulus ignicapillus*, being white, shaded with dull ochre-brown, not with pale reddish as are the latter; but when fresh the yelk showing through the thin shell gives them a faint reddish tinge. One clutch I took at Altenkirchen on the 14th of May this year (1874) are almost pure white, having round the larger end a wreath of dull ochre-brown spots so small and close together that they form a mere shading of that colour. In size my eggs of this species average about $\frac{2.2}{4.0}$ by $\frac{1.7}{4.0}$ inch, and are oval in shape, tapering slightly towards one end.

The food of the present species consists entirely of small insects; and the stomachs of several specimens I shot were filled entirely with minute flies.

The specimens figured are those described, and are in my own collection, except the young bird, which belongs to Messrs. Salvin and Godman.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a, b, ♂. Surrey, November 1865. *c*. Hampstead, September 1870 (*Davy*). *d, ♀*. Hampstead, January 21st, 1871 (*Davy*). *e*. Farnborough, Kent, 1854 (*H. E. D.*). *f, ♂, g, ♀*. Piedmont, November 1869 (*Salvadori*). *h, ♂*. Shanghai, October 19th, 1868 (*R. Swinhoe*).

E Mus. Salvin and Godman.

a, ♀. Middlesex, 1856 (*O. Salvin*). *b, ♀*. Surrey, January 1857 (*F. Godman*). *c, ♂*. Norway, March 20th, 1859 (*F. Godman*). *d*. St. Michaels, Azores, March 1865 (*F. Godman*). *e, ♂*. Azores, 1865 (*F. Godman*). *f, ♀*. Azores, April 1865 (*F. Godman*). *g, ♀, h, juv.* Teneriffe, May 23rd, 1871 (*F. Godman*).

E Mus. Brit. Reg.

a, b. Avington, Hants (*Shelley*). *c, ♂, d, ♀*. Hakodadi, Japan. *e*. Nepal (*B. H. Hodgson*).



Miner Bros. imp.

- 1 FIRE-CRESTED WREN
REGULUS IGNICAPILLUS ♀
2. MADEIRAN GOLD-CREST.
REGULUS MADERENSIS

REGULUS IGNICAPILLUS.

(FIRE-CRESTED WREN.)

Sylvia ignicapilla, C. L. Brehm, in Temm. Man. d'Orn. i. p. 232 (1820)*Regulus ignicapillus* (Br.), Meyer, Taschenb. Deutsch. Vogelk. iii. p. 109 (1822).*Regulus pyrocephalus*, Meyer, Beitr. Vogelk. ii. p. 130, pl. 1. fig. 1 (1822).*Regulus mystaceus*, Vieill. Faun. Franç. p. 231 (1822, partim).*Regulus nilsonii*, C. L. Brehm, Vög. Deutschl. p. 482 (1831).*Regulus brachyrhynchos*, C. L. Brehm, tom. cit. p. 483 (1831).

Fire-crested Wren, *Fire-crested Regulus*, English; *Roitelet à triple bandeau*, French; *Feuerköpfiges Goldhähnchen*, German; *Regolo*, Italian; *Zieniel*, Maltese; *Estrelliña*, Spanish; *Estrellinha*, Portuguese; *Het Vuurgoudhaantje*, Dutch; *Corolek crasnovolosey*, Russian.

Figuræ notabiles.

D'Aubenton, Pl. Enl. 651. fig. 3; Werner, Atlas, *Insectivores*, pl. 61; Kjærbølling, Orn. Dan. taf. 54. fig. 5; Fritsch, Vög. Eur. taf. 19. figs. 1, 2; Naumann, Vög. Deutschl. taf. 93. figs. 4, 5, 6; Gould, B. of Eur. pl. 148. fig. 2; id. B. of G. Brit. ii. pl. lxx.; Schlegel, Vog. Nederl. pl. 124; Roux, Orn. Prov. pl. 235.

♂ *ad.* fronte ad basin rostri grisescenti-albidâ, vertice aurantiaco fasciâ nigrâ utrinque marginato, a naribus supra oculos ad nucham striâ albidâ, et striâ albidâ indistinctâ ad basin rostri sub oculis: loris et striâ per oculos ductâ nigricantibus, et ad basin mandibulæ striâ indistinctè nigrâ: facie laterali reliquâ grisescente: corpore suprâ et subtùs ut in *Regulo cristato*, sed collo lateraliter pulchrè flavicanti-viridi.

♀ *ad.* mari similis, sed vertice luteo et corpore suprâ pallidiore.

Adult Male in summer (Altenkirchen, Coblenz, 19th May, 1874). Back, nape, scapulars, and rump rich dark olive-green, becoming lighter, almost rich golden-green on the sides of the neck below the nape; quills dark blackish brown, externally edged with greenish yellow; primary coverts tipped with white, and the edge of the wing below the carpus also white; secondaries at the base white, slightly washed with yellowish green, and below this black, this latter forming an indistinct black patch across the secondaries; tail blackish brown, with narrow yellowish green margins to most of the feathers; forehead, at the base of the bill greyish white, beyond which is a narrow black line joining the sides of the crest, where it broadens, forming a broad black streak on each side of the crown, bordering a crest of elongated feathers covering the centre of the head rich flame-orange in colour, narrowly bordered with yellow; from the forehead above and beyond the eye to the nape a greyish white streak passes, and another less distinct streak from the base of the bill below the eye; lores and a streak through and behind the eye blackish, and another small blackish streak passes from the base of the lower mandible downwards and backwards; sides of the head otherwise greyish; underparts greyish white, on the throat slightly washed with yellowish grey; bill blackish; iris hazel; legs dark brown. Total length about 3·5 inches, culmen 0·42, wing 2·12, tail 1·75, tarsus 0·7.

Adult Female (shot with the above). Similar to the above, except that the crest is bright lemon-yellow, and the back is a shade paler in tinge.

Adult Male in autumn (Turkey). Differs from the summer-plumaged specimen merely in having the underparts, particularly the breast and flanks, washed with pale buffy brown; but the colour of the crest and upper parts is almost brighter than in spring.

Young. I have no specimen in immature plumage; but Naumann describes the young bird just fledged as lacking the rich yellow and black markings on the crown, this being greenish grey; but on the sides of the head it has the blackish and white stripes, so characteristic of this species, like the adult bird, but duller; the remaining portions of the body paler and duller than in the adult bird.

THE Fire-crested Wren has a much more restricted range than its congener the Golden-crested Wren, being found in Central and Southern Europe and Northern Africa.

In Great Britain it is extremely rare, and is in fact in but few localities so common as the Golden-crested Wren. Professor Newton, in the new edition of Yarrell's 'British Birds,' writes that "it was first made known as occurring in this country by Mr. Leonard Jenyns, who obtained an example killed by a cat in his own garden at Swaffham-Bulbeck, near Cambridge, in August 1832; and the specimen, being a young of the year, was exhibited soon after at a meeting of the Zoological Society (Proc. Zool. Soc. 1832, p. 139). It is now in the Museum of the University of Cambridge. Early in October 1836, an example, now in the collection of Mr. John Hancock, was caught on the rigging of a ship five miles off the coast of Norfolk, as recorded by his brother (Mag. Zool. and Bot. i. p. 491). Since that time more than thirty other well-authenticated occurrences of the species in this country have been observed. Nearly half the specimens obtained have been met with in Cornwall, chiefly in Lariggan Valley, as stated by Mr. Rodd. One example having been taken in Devonshire, one in the Isle of Wight, twelve have come to the notice of observers in Sussex; one is said to have been taken in Kent, one in Norfolk, one in Yorkshire, and one in East Lothian. This last rests on the authority of Dr. Turnbull, and, except the original Cambridgeshire specimen, is the only one said to have been obtained in summer, the rest having occurred between September and April, but mostly in the depth of winter."

Mr. G. Dawson Rowley writes (Ibis, 1864, p. 223) that two were obtained at Brighton "by Mr. Swaysland, in his garden, October 15, three being observed, all in company with Cole Tits (*Parus ater*). One of the latter only was seen to enter the net; on going up, however, a *Regulus ignicapillus* was also found; another flew in, a few minutes after; a third escaped. I find, in my notes, the capture of a *Regulus ignicapillus* on the Dyke-road, near Brighton, recorded 29th October, 1853; and Mr. Swaysland tells me of a fourth instance many years before." Mr. Cecil Smith informs me that he possesses two specimens from Guernsey. The only instance of its occurrence in Scotland is the one above referred to by Professor Newton as having been obtained in East Lothian. The specimen referred to was shot by Dr. Turnbull in Gladmuir woods in the summer of 1848. Mr. R. Gray says that it is totally unknown in Western Scotland. Mr. H. C. Müller records it as having once occurred on the Færoes; but it has not been met with in Norway, Sweden, or Finland. Mr. Sabanäeff informs me that it has

been met with near Moscow during the spring migration, and probably breeds in that vicinity. It has, he further writes, been found in the Governments of St. Petersburg, Orloff, and in the districts of Kieff and Charkoff. I do not find it recorded from Poland, where, however, it doubtless occurs. As regards its distribution in North Germany Borggreve writes that Pastor Boeck found it in the neighbourhood of Danzig; according to Gloger it is rare in Silesia; Tobias found it breeding in Lausitz much more numerous than *R. cristatus*. It also breeds in Thuringia and Mecklenburg. Borggreve himself only met with the present species in the Rhine and Weser mountains; but I found both species breeding in Nassau and the Coblenz district, in the proportion of about one *R. cristatus* to ten of the present species. Dr. Rey writes that he has only met with it in winter in Saxony, and it is much less common than the Golden-crested Wren on the Dolauer Haide. It has occurred as far north as Denmark; for Professor Kjærbølling states, on the authority of Mr. Steenberg, that it has been shot at Helsingöer. Mr. Hage shot one on Möen on the 19th November, 1832, and had, moreover, two specimens from Seeland. It has once been killed on Borkum, and is found in Holland and Belgium, but is much rarer than *R. cristatus*; and Degland and Gerbe refer to it as occurring in France, but do not give any details as to its distribution in that country. In Provence it is common during the winter. Professor Barboza du Bocage includes it in his list of birds occurring in Portugal as common; and it is, Colonel Irby informs me, numerous near Gibraltar, in Spain, where it breeds, but he has not succeeded in finding its nest. He sent home a series of specimens from that locality, all of which I had an opportunity of examining; but being carbolized they could not be skinned. Mr. Howard Saunders met with it on the island of Majorca, where, he was informed, it was not uncommon. It is found in Italy: Bettoni says that it breeds in Lombardy; and Doderlein states that it is abundant, and partially resident, in the province of Modena, though not so numerous as *R. cristatus*. In Sicily, however, it is the more numerous species, arriving in the district of Palermo towards the end of October, and returning to the higher grounds early in April. Mr. A. B. Brooke records it (*Ibis*, 1873, p. 243) as "very common in the ilex forests on the range of mountains south of Villacidro, in which localities I saw them during the months of May and June." Mr. C. A. Wright says (*Ibis*, 1864, p. 55) that he possesses a "specimen which was shot by Mr. J. Horne on the 5th November, 1860. It appears to be somewhat rare, although no doubt they often escape detection." It is found in Southern Germany, but is nowhere so numerous as the Golden-crested Wren. Dr. A. Fritsch says that it inhabits the fir-woods of Bohemia, and visits the gardens and plantations during the winter. He once procured a number of specimens from near Prague. In Greece it appears to be found in the summer as well as the winter. Lindermayer says that it is a common species in the woods of Rumelia, where he considers it to be a resident; for he met with it in winter in Attica, and Dr. Krüper found its nest, containing eggs, in Mount Parnassus. I have several specimens obtained in Turkey by Mr. Robson; and it is found in Southern Russia; but Von Nordmann states that it has only been obtained two or three times in the vicinity of Odessa, and appears to be rare in the Crimea. Strickland obtained it in December at Smyrna; but I have no notes from Dr. Krüper respecting its occurrence there. It is not recorded from North-east Africa, but is said to occur in all the provinces of Algeria, and to be common in the forests of Constantine.

In Madeira it is replaced by a tolerably closely allied though distinct species, *Regulus maderensis*.

Being desirous of observing the present species during the breeding-season, I accepted an invitation from my friend Mr. Carl Sachse, of Altenkirchen, near where this bird breeds numerous, to spend a few days with him; and I am now writing these notes on the spot close to where there are several nests of the Fire-crested Wren. The entire country around is covered here and there with tolerably large groves and woods of pine and fir, intermixed with non-evergreen growth; and in these, more especially in those groves which consist entirely of fir-growth, the present species is numerous, and particularly so just across the frontiers of Nassau. So numerous are they in some localities, that, in spite of the difficulty in detecting their nests, we found fifteen in one day. I am greatly indebted to Mr. Sachse for his courtesy in showing me the groves where the Firecrests are most numerous, besides obtaining for me the assistance of a couple of young peasants who are peculiar adepts in finding nests, as well as excellent climbers; indeed, without their assistance I should have done but little good. So quiet and still are these birds in their habits that any one not a naturalist might traverse the woods for days without being aware of their presence. A shrill, low, prolonged chirp is the only indication of there being any Firecrests in the neighbourhood; and even then it requires a close scrutiny of the densely foliated fir trees to catch a glimpse of the tiny being which is uttering the sound and flitting about amongst the branches. Restless to a degree, I have never seen one quiet for more than a second or two at a time; and they seem to be continually flitting about amongst the small branches, now, like a Titmouse, clinging underneath the twig or fluttering in the air at the end of a pendent branch, probably picking off some minute insect, then suddenly flying with a short jerky flight to the next tree, or dropping down to another branch to recommence the search for food. It is no easy task to shoot one, unless it shifts its quarters to one of the pine trees, where the foliage is less dense; for they keep flitting and climbing amongst the thick foliage, so that it is difficult to obtain a clear view of them; and even then a small twig may save them, and scared by the shot they fly off to another tree and suddenly disappear; but as they seldom fly far, they may by watching for some time be again discerned. The Golden-crest is likewise found in these woods, but is far less numerous, being in the proportion of about one to ten of the present species. During the entire time I have spent in these woods I have never heard one utter any sound beyond the single feeble shrill call-note above referred to; but Mr. Sachse informs me that during the spring, when pairing, they frequently utter a sort of song which may be heard at a considerable distance. The nest is almost always placed in a fir tree, and, being built close under the centre of the branch amongst the pendent twigs, is by no means easy to discover. Usually they are built on the edge of the grove or by the side of one of the paths cut through the wood, and are sometimes only a few feet above the ground, and at others at an altitude of from ten to twenty or thirty feet. We found four nests quite low down in some small fir trees planted on the side of a road skirting the wood; and one was skilfully placed in the very centre of a small juniper-bush not four feet above the ground. The lads who accompanied me tell me that they never found a nest in a pine or larch, and that not one in fifty is ever placed any where except in a fir tree. The eggs are usually deposited early in May; but this season being a very late one, most of the nests found in the middle of the month contain

but one or two eggs. Nine appears to be the number usually deposited; but occasionally one or two more are found in one nest. I have now before me a very beautiful nest taken here a few days ago, and which is still attached to the bough under which it was built. The entire structure is carefully fastened with spiders' webs to four of the long spine-covered pendent twigs of the fir, these twigs being carefully interwoven in the outer portion of the nest. The entire outer structure is composed of green moss intermixed with grey lichens, carefully felted together into a firm cup-shaped structure, the various portions of moss being apparently interwoven and strengthened with spiders' webs. The outer walls are most carefully finished and rounded off on the edge, and the entire structure is exceedingly neat. The inner lining is composed of feathers of various sorts, amongst which several of the red breast-feathers of the Linnet are most conspicuous. The nest is so carefully interwoven under the branch that only a small entrance remains free between two twigs to afford the bird ingress and egress. In size the nest measures as follows:—Entire width 90 millimetres, width of the cup inside 45, entire height outside 70, inside 40.

Mr. Sachse informs me that the amount of feathers used in the lining of the nest depends entirely on the state of the weather at the time when the bird is building; for if the weather is dull and rainy but few, if any, feathers are used, as they cannot be made use of when wet; whereas during fine weather many feathers are collected for the lining. This I find fully confirmed by my own experience, as all the nests I examined yesterday, which must have been built during the late rainy weather, are utterly or nearly devoid of the usual lining of feathers, whereas those taken by Mr. Sachse about ten days previously are well lined with them. Another curious circumstance observed by Mr. Sachse is the fact that during cold weather all the eggs deposited have an exceedingly thin and fragile shell compared with those laid during fine warm weather. The birds appear, when they have used a tree once for the purpose of nidification, to return thither again and again; and when once a nest has been found in a favourite tree it may be almost taken for granted that another will be found in the following year in the same tree, and often on the same branch, even if the former nest has been taken or destroyed. The Jay appears to be a most active agent in the destruction of the nests of this species; and we found many nests which had been pulled out and the eggs probably devoured by this arrant egg-thief, who does more damage than all the village lads, who cannot well be prevented from bird-nesting, and who appear to take not a few eggs of the present species as well as of the various other small birds which inhabit these woods.

The eggs of the present species may readily be distinguished from those of the Golden-crested Wren by their reddish tinge, which replaces the brownish yellow markings in the eggs of the latter species. They are about similar in size, and when unblown are not so very easily distinguished, as the yelk gives a faint reddish tinge to the Golden-crested Wren's eggs. In some eggs of the Fire-crested Wren in my collection the minute reddish dots are collected towards the larger end, leaving the rest of the egg white with but little tinge of red; and several have one or two black streaks at the larger end. The full number of eggs deposited is usually nine or ten; but in some instances one or two more have been found. I have before me a series of over seventy eggs of the present species, all of which may be readily distinguished from those

of the Golden-crested Wren by their more rufous tinge; but some are much redder than others, one or two being nearly white.

The specimens figured and described are an adult male and female shot by myself at Altenkirchen, near Coblenz, in May this year—the former being figured on the same Plate with *R. cristatus*, and the latter with the male of *R. maderensis* on another Plate.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a, ♂, *b*, ♂, *c*, ♀. Altenkirchen bei Coblenz, May 19th, 1874 (*H. E. D.*). *d*, ♂. Bujukdere valley, Turkey, December 20th, 1869. *e*, ♂, *f*, ♀. Ortakuy, Turkey, March 1871. *g*, *h*. Maslak, Turkey, October 1871 (*T. Robson*).

E Mus. Salvin and Godman.

a, *b*, ♂. Europe.

REGULUS MADERENSIS.

(MADEIRAN GOLDCREST.)

Regulus —? Vern. Harc. Ann. & Mag. Nat. Hist. ser. 2, vol. xii. p. 58 (1853).

Regulus maderensis, Vern. Harc. P. Z. S. 1854, p. 153.

Figura nulla.

♂ *ad.* *Regulo ignicapillo* persimilis, sed pileo flavicantiore, striâ superciliari et striâ suboculari brevioribus: capitis lateribus, nuchâ et dorso superiore cærulescenti-cinereis: tarso longiore et pedibus robustioribus quam in *R. ignicapillo* et *cristato*.

♀ *ad.* vix a mare distinguenda: corpore suprâ vix sordidiore et pileo paullo pallidiore.

Adult Male (Madeira, 23rd June). Resembles *Regulus ignicapillus*, except that it has the crown less richly coloured; the white streak above the eye and that below the eye passing backwards for much shorter distance than in that species, the latter not being extended beyond the eye; in front of the eye there is a black patch, but none behind the eye; sides of the head, neck, nape, and entire fore part of the back rich bluish or slaty ash-coloured; tarsus much longer and feet much larger than in either of the other European species. Total length about $3\frac{1}{2}$ inches, culmen 0.5, wing 2.2, tail 1.8, tarsus 0.8, middle toe with claw 0.5, hind toe with claw 0.45.

Adult Female (Madeira, 23rd June). Differs very slightly from the male in having the crest a trifle paler in colour, and the plumage in general slightly duller in tinge.

THIS beautiful Goldcrest, differing chiefly from the common European Fire-crested Wren by its long tarsus and blue-grey neck, is only known to inhabit Madeira. Mr. E. Vernon Harcourt, in describing it as new says (*l. c.*) that "it lives in the laurel-forest and in the *urze* (or tree heaths) in the northern and more unfrequented parts of the island of Madeira." He frequently saw it on the wing, but could never get near enough to hear its voice. The Portuguese, he says, give it the name of "*Abibe*."

Mr. F. DuCane Godman (*Ibis*, 1872, p. 173) says that it is "not uncommon in the higher parts of Madeira, where it frequents chiefly the tree heath (*Erica arborea*) and the arbutus (*Clethra arborea*), and, like our Goldcrest, feeds upon insects it picks from the leaves. It is not easy to procure specimens, as the brush-wood is so thick, and when shot at from a close distance a bird is blown to pieces and spoiled for preserving. I also found it in a fir-wood a little above St. Anna, on the north side of the island. This was the only place I met with it low down."

Beyond the above few and meagre particulars I can find nothing recorded respecting the present species. It breeds in Madeira; but its nest and eggs do not appear to have been obtained by any naturalist.

This being the last species of Golden-crested Wren of which I shall have to treat, it may

not be out of place to give some short review of this genus, taking, as usual, Mr. G. R. Gray's well-known 'Hand-list' as a basis, the numbers used being those of the said list.

3100. *R. cristatus* is distinguishable from all the other species by the absence of white stripes on the sides of the head or of a black stripe through the eye. It inhabits Europe and Asia as far east as Japan. Full particulars as to its range are given in the article on that species.
3101. *R. ignicapillus* has a whitish stripe above and one under the eye, the former being extended far back; and through the eye a blackish stripe is drawn. The crown is also richer-coloured than in *R. cristatus*, and the sides of the neck near the fore part of the back are rich golden-yellow. As stated in the article on this species, it occurs in Europe only.
3102. *R. himalayensis* is identical with *R. cristatus*.
3103. *R. maderensis* is, as above stated, clearly a distinct species, being closest to *R. ignicapillus*. It is found only in Madeira, where it is resident.
3104. *R. satrapa* differs from *R. ignicapillus* in having the sides of the face browner and duller in tinge, the superciliary white stripe less distinct than in that species, the dark streak not extending behind the eye, and the light streak under the eye scarcely visible. The entire fore part of the back is dull grey, with a faint olive tinge, not bright olive as in *R. ignicapillus*; and it entirely lacks the rich golden-green colour on the sides of the neck. It inhabits North America and the highlands of Mexico.
3105. *R. surinamensis*, Gould. I have been unable to trace where Mr. Gould describes this bird, and greatly doubt if it is a true *Regulus*.

The measurements of the various species of Goldencrests from different localities vary as follows:—

| | | Culmen. inch. | Wing. inches. | Tail. inch. | Tarsus. inch. |
|------------------------|---------------------|------------------|------------------|----------------|------------------|
| <i>R. cristatus</i> | England, ♂, ♀. | 0·45–0·48 | 2·0 | 1·63–1·65 | 0·7 |
| " | Germany. | 0·45 | 2·1 | 1·65 | 0·7 |
| " | Malta, ♀. | 0·45 | 2·0 | 1·68 | 0·72 |
| " | Teneriffe, ♀. | 0·45 | 1·85 | 1·55 | 0·7 |
| " | Azores, ♂. | 0·45–0·46 | 1·95–2·05 | 1·7 –1·75 | 0·7 |
| " | Shanghai, ♂. | 0·48 | 2·1 | 1·85 | 0·7 |
| " | Japan, ♂. | 0·45 | 2·2 | 1·75 | 0·72 |
| " | Nepal. | 0·45 | 2·2 | 1·6 | 0·73 |
| <i>R. ignicapillus</i> | Germany, ♂. | 0·45 | 2·0 –2·1 | 1·65–1·7 | 0·7 |
| " | Turkey, ♂. | 0·45–0·46 | 2·0 –2·1 | 1·7 –1·75 | 0·68–0·72 |
| " | Southern Europe, ♂. | 0·46–0·48 | 2·0 –2·1 | 1·7 –1·72 | 0·7 |
| <i>R. maderensis</i> | Madeira, ♂. | 0·5 | 2·1 –2·2 | 1·7 –1·8 | 0·8 |
| <i>R. satrapa</i> | Washington. | 0·4 | 2·3 | 1·85 | 0·7 |

The specimen of the Madeiran Goldcrest which is figured (on the same Plate with the female Fire-crested Wren) was obtained at Madeira by Mr. F. DuCane Godman. I have not figured the female of this species, as it so nearly resembles the male.

In the preparation of the above article I have examined the following specimens:—

E Mus. Salvin and Godman.

a, ♂, *b*, ♀. Madeira, June 23rd, 1871 (*F. Godman*). *c*, *d*, ♂. Madeira, June 28th, 1871 (*F. G.*).

Genus PHYLLOSCOPUS.

- Ficedula* apud Brisson, Orn. iii. p. 479 (1760).
Motacilla apud Linnæus, Syst. Nat. i. p. 338 (1766).
Sylvia apud Scopoli, Ann. I. Hist. Nat. p. 154 (1769).
Asilus apud Bechstein, Orn. Taschenb. p. 176 (1802).
Trochilus apud Forster, Synopt. Cat. p. 14 (1817).
Phylloscopus, Boie, Isis, 1826, p. 972.
Curruca apud Fleming, Brit. Anim. p. 70 (1828).
Regulus apud Fleming, ut suprâ (1828).
Sibilatrix apud Kaup, Natürl. Syst. p. 98 (1829).
Phyllopneuste apud C. L. Brehm, Vög. Deutschl. p. 427 (1831).
Sylvicola apud Eyton, Cat. Brit. B. p. 14 (1836).
Reguloides apud Blyth, J. A. Soc. Beng. xvi. p. 442 (1847).
Abornis apud Bonaparte, Consp. Gen. Av. i. p. 290 (1850).
Phyllobasileus apud Cabanis, Journ. f. Orn. i. p. 91 (1854).
Hypolais apud Severtzoff, Turk. Jevotn. p. 125 (1873).
Phyllopseustes apud Meves, Journ. f. Orn. 1875, p. 429.
Phyllopseuste apud Giebel, Thes. Orn. iii. p. 121 (1877).

THIS genus includes all our Willow-Warblers, and forms a fairly distinct group, though some of the species approach near to the genus *Hypolais*, others to *Regulus*, and others (which do not occur in the Western Palæarctic Region) show a tendency towards the genus *Abornis*. Mr. Seebohm, in his article on the *Phylloscopi* (Ibis, 1877, pp. 66–108), though he includes all in the same genus, says that they might be split up into three sections, viz.:—

Acanthopneuste. Bill large, and pale underneath; one, and frequently two bars across the wings.

Phylloscopus. Bill slender, more or less dark underneath, no bar across the wings.

Reguloides. Bill slender, more or less dark underneath; two bars across the wings; a more or less distinct mesial line on the crown.

In the first of these sections he includes, of the Western Palæarctic species, *Phylloscopus borealis* and *Phylloscopus plumbeitarsus*, in the last *Phylloscopus superciliosus*, and in the second all the remaining species included in the present work.

The present group ranges over the Palæarctic, Ethiopian, and Oriental Regions; and one species, *Phylloscopus borealis*, has also been met with in the extreme north-western portion of the Nearctic Region. Within the limits of the Western Palæarctic Region eight species of *Phylloscopus* occur, only two of which are stragglers from Asia, the others being regular summer residents. The *Phylloscopi*, or Willow Warblers, are exceedingly fine songsters. They are insectivorous, feeding chiefly on small insects and larvæ which infest the foliage of trees. They build semidomed or oven-shaped nests, and lay white eggs spotted with red or purple.

These Warblers have more or less slender bills, and have the upper parts varying in colour from olive-green to brown, the lower parts varying from yellow or greenish yellow to white.

Phylloscopus trochilus, which I consider to be the type of the genus, has the bill rather

short, slender, straight, compressed towards the end, bristles small; tarsus long, with seven anterior scutellæ, of which only the lower three are distinct; wings moderate in length, the quills nineteen in number, the bastard primary of medium size, the third primary longest, the fourth and fifth rather shorter; tail long, straight, slightly emarginate.

Two species, which I have not included in the present work, are said to have been obtained in Europe, viz. *Phylloscopus nitidus*, Blyth (J. A. S. Beng. xii. p. 967, 1843), and *Phylloscopus proregulus* (Pall.). According to Mr. Seebohm (Ibis, 1877, p. 105) one specimen of the latter species has been shot (and another seen) in Heligoland; but this specimen does not appear to be now in existence for examination. Mr. Gätke also states (Ibis, 1879, p. 103) that his son shot a specimen of *Phylloscopus nitidus* on Heligoland, and he believes that another Willow-Warbler obtained there, on the 25th September 1878, must be referable to *Phylloscopus viridanus*.



YELLOW-BROWED WARBLER.

PHYLLOSCOPUS SUPERCILIOSUS

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PHYLLOSCOPUS SUPERCILIOSUS.

(YELLOW-BROWED WARBLER.)

- Yellow-browed Warbler*, Lath. Gen. Synopsis, ii. p. 459. no. 61, "Russia" (1783).
Motacilla superciliosa, Gm. Syst. Nat. i. p. 975. no. 120 (1788, ex Lath.).
Sylvia superciliosa (Gm.), Lath. Ind. Orn. ii. p. 526. no. 63 (1790).
Motacilla acredula, Pallas, Zoogr. Rosso-As. i. p. 497, nota (1811, partim, ex Messerschmidt).
Motacilla proregulus ♀, Pallas, tom. cit. p. 500, nota (1811).
Regulus modestus, Gould, J. Hancock, An. N. H. ii. p. 310, "near Hartley, Northumberland coast" (1839, nec Gould).
Regulus inornatus, Blyth, J. A. S. B. xi. p. 191, "patr. incog." (1842).
Regulus modestus, Gould, Yarrell, Brit. Birds, i. p. 316 (1843); id. op. cit. ed. 2, i. p. 355 (1845, nec Gould).
Phylloscopus modestus (Gould), Blyth, op. cit. xii. p. 963, "vicinity of Calcutta" (1843, nec Gould).
Phyllopneuste modesta (Gould), Blyth, An. N. H. xii. p. 98. no. 85, "vicinity of Calcutta" (1843); id. op. cit. xiii. p. 116 (1844, nec Gould).
Phyllopneuste reguloides, Hodgs., Gray, Zool. Misc. p. 82. no. 862, "Nipaul" (1844); id. J. A. S. B. xxiv. p. 575. no. 862, "Nipaul" (1855).
Reguloides modestus (Gould), Blyth, J. A. S. B. xvi. pp. 441, note, 442 (1847); id. Cat. Calc. Mus. p. 184. no. 1097 (1849, nec Gould).
Regulus modestus, Gould, Cabanis, Naumannia, ii. pt. 1, p. 5, "vicinity of Berlin" (1852, nec Gould).
Phyllobasileus superciliosus (Gm.), Cabanis, J. f. O. i. p. 93, pl. 1. figs. 1, 2 (1853, syn. exclu.).
Regulus modestus, Gould, Gätke, J. f. O. i. pp. 91, 92, "Helgoland" (1853); id. op. cit. ii. p. 70, "Helgoland" (1854, nec Gould).
Sylvia (Phyllopneuste) proregulus (Pallas), Von Middendorf, Reise Nord. and Ost. Siber. ii. pt. 2, p. 183. no. 101 (1853, partim).
Ficedula proregulus (Pallas), Schlegel, Vog. van Nederl. pp. 130, 241 (1854-58).
Reguloides proregulus (Pallas), Horsf. & Moore, Cat. E. I. C. Mus. i. p. 342. no. 538, "Bengal, Nepal" (1854, nec Pallas).
Phyllobasileus superciliosus (Gm.), Blasius, Naumannia, v. p. 485 (1855, partim).
Sylvia bifasciata, Gätke, Naumannia, viii. p. 419, "Helgoland" (1858).
Phyllopneuste proregulus (Pallas), Blasius, op. cit. viii. p. 311. no. 19, "Helgoland" (1858); id. Ibis, iv. p. 66. no. 19 (1862, nec Pallas).
? *Phyllobasileus superciliosus* (Gm.), Pässler, J. f. O. vii. p. 103, "Brambach" (1859).
Sylvia bifasciata, Gätke, Edinb. New Phil. Journ. new series, ix. p. 335, "Heligoland" (1859).

- Phyllopneuste (Phyllobasileus) superciliosa* (Gm.), Von Schrenck, Reisen im Amur-Lande, i. p. 363. no. 96 (1860).
- Phyllopneuste superciliosus*, Naumann, Vögel Deutschl. 2nd ed. xiii. Theil, pp. 74, 77, pl. 378. figs. 2, 3 (1860).
- Reguloides proregulus* (Pallas), Swinhoe, Ibis, ii. p. 54. no. 38, "Amoy" (1860); id. op. cit. iii. p. 32. no. 27, "Hongkong, in February;" id. tom. cit. p. 330, "Tungchow, in September" (1861); id. op. cit. iv. pp. 257, 258, "Foochow" (1862, nec Pallas).
- Motacilla superciliosa*, Gm., anonym. Ibis, iv. pp. 53-57 (1862, partim).
- Reguloides superciliosa* (Gm.), Blyth, Ibis, iv. p. 386. no. 4 (1862, excl. syn.); id. op. cit. n. s. iii. p. 26. no. 565 (1867, excl. syn.).
- Phyllopneuste superciliosa* (Gm.), Bolle, J. f. O. xi. p. 60, "vicinity of Berlin, in October" (1863).
- Reguloides proregulus* (Pallas), G. R. Gray, Cat. Nipal Birds in Brit. Mus. 2nd ed. p. 31. no. 158 (1863, nec Pallas); Jerdon, Birds of India, ii. p. 197. no. 567 (1863, nec Pallas).
- Sylvia (Phyllopneuste) superciliosa* (Gm.), Radde, Reisen im Süden v. Ost-Sibir. ii. p. 264. no. 140 (1863, partim).
- Reguloides superciliosus* (Gm.), Swinhoe, Ibis, v. p. 307. no. 73, "Formosa" (1863); id. op. cit. n. s. ii. p. 135, "Formosa, August 23" (1866); id. op. cit. iii. p. 408, "Amoy" (1867); id. op. cit. vi. p. 345. no. 91, "Hainan, in February" (1870); id. P. Z. S. 1863, p. 297. no. 177; id. op. cit. 1871, p. 357. no. 140.
- Regulus modestus*, Gould, Tristram, Ibis, vi. p. 230, "Jericho" (1864, nec Gould).
- Phylloscopus superciliosus* (Gm.), Crommelin, Ned. T. D. iii. p. 244, "Sept. 15, near Leyden" (1866).
- Reguloides superciliosus* (Gm.), Tristram, Ibis, n. s. iii. p. 83, "near Jericho" (1867); J. Hancock, tom. cit. p. 252; Brooks, Ibis, n. s. v. p. 236; id. tom. cit. p. 354, "Almorah, April 29" (1869); id. op. cit. (s. 3) ii. p. 24 (1872); Gould, Ibis, n. s. v. p. 128, "in October, Cheltenham" (1869); id. B. of Great Britain, pt. xv. pl. (August 1st, 1869); Dresser, P. Z. S. 1871, p. 103.
- Regulus modestus*, Gould, v. Pelzeln, Verh. k.-k. zool.-bot. Gesellsch. 1871, p. 11, "Vienna" (nec Gould).
- Phylloscopus superciliosus* (Gm.), A. Newton, Hist. Brit. Birds, pt. vi. p. 443 (1873).

(The above by Lord Walden.)

Figuræ notabiles.

Cab. *loc. cit.*; Fritsch, Vög. Eur. taf. 19. figs. 3, 4; Gould, *loc. cit.*; Sundevall, Sv. Fogl. pl. lxviii. fig. 1.

♂ *ad. ptil. æst.* capite summo, nuchâ et scapularibus grisescenti-olivaceis, uropygio et supracaudalibus viridi lavatis: remigibus saturatè brunneis, primariis et secundariis externis in pogonio externo virescente flavo marginatis: secundariis intimis et tectricibus alarum majoribus et medianis sulphurescente albido conspicuè apicatis: rectricibus saturatè brunneis, in pogonio externo vix virescente flavo marginatis: capitis lateribus albis vix grisescente olivaceo lavatis, striâ superciliari albidâ: gulâ, gutture, et corpore

subtùs albis, hypochondriis virescente griseo lavatis : rostro brunneo : iride brunneâ : pedibus pallidè brunneis.

♀ mari similis, sed sordidior.

♂ *ptil. hiem.* ubique sordidior et virescentior : remigibus secundariis et tectricibus alarum flavicante cervino nec albido apicatis : striâ superciliari flavicanti-cervinâ, et pectore cum hypochondriis pallidè flavicante cervino lavatis.

Adult Male in breeding-plumage (Lake Baikal, May 22). Crown, nape, back, and scapulars greyish olive ; rump and upper tail-coverts washed with green ; wings dull dark brown, all the quills, except the inner secondaries, edged with yellowish green on the outer web ; inner secondaries slightly, and larger and median wing-coverts broadly tipped with white, slightly shaded with sulphur-yellow ; rectrices dull dark brown, narrowly edged on the outer web with pale yellowish green ; sides of the face white, intermixed with greyish olive ; from the base of the bill over the eye to the nape a tolerably broad dirty white stripe ; underparts including chin and throat white, on the flanks washed with greenish grey ; bill dark brown ; iris dark brown ; legs light brown. Total length about $3\frac{1}{2}$ inches, culmen 0.45, wing 2.1, tail 1.7, tarsus 0.7, first primary short, but 0.25 longer than the wing-coverts, and 0.9 shorter than the second, which is 0.3 less than the third, third and fourth about equal, being the longest.

Adult Male in autumn (Darasun, 29th August). Differs from the above-described bird in having the upper parts very much greener, the tips to the wing-coverts and secondaries and the stripe over the eye (which latter is large and clearly developed) being bright sulphur-yellow instead of white ; flanks washed with pale greenish yellow, with but little trace of grey. A specimen shot by Mr. W. E. Brooks, of Etawah, on the 16th October, has the upper parts duller than the bird killed in August above described ; the margins to the wing-coverts and secondaries are dull yellowish buff ; the superciliary stripe is yellowish buff ; and the flanks and breast are washed with pale buff with a yellowish tinge.

Female. Similar to the male, but a trifle duller in colour.

THIS small Warbler, which has by so many authors been confused with a closely allied species (*Phylloscopus proregulus*), is an inhabitant of Asia, and has only been met with on few occasions as a straggler to Europe. Its first recorded occurrence in Europe is that of a specimen obtained in Northumberland in 1838 by Mr. John Hancock, who shot it on the banks near Hartley, on the coast of Northumberland, on the 26th September in that year. Between then and 1845 there appears to be no instance of its occurrence in Europe on record ; but in that year two specimens were obtained near Berlin, as recorded by Dr. Cabanis, who says (*Journ. für Orn.* 1853, p. 82) that late in October 1845 a female was caught by a bird-catcher at the village of Rixdorf, about a German mile from Berlin, and soon after a male was caught by the same individual, the former of which was sold to Fürst Radziwill, and the latter subsequently came into the collection of Mr. F. Heine. Since then it has been frequently recorded from Heligoland, where Mr. Gätke obtained eight specimens between 1847 and 1850, nearly all of which were killed by boys with blowpipes ; and he subsequently informed Professor Newton (*Yarr. Brit. B.* p. 445) that three more specimens were killed in 1859. A bird was caught near Berlin in October 1860, as recorded by Dr. Carl Bolle (*J. f. O.* 1863, p. 61), which is supposed to have been a Yellow-browed Warbler ; but it was not preserved, and therefore there is no

proof as to what it really was. The present species does not appear to have ever occurred in Scandinavia; and though Blasius (Naumannia, 1855, p. 485) says that he observed it in the region of the Dwina in the month of August, this statement cannot be received without considerable caution, as no other naturalist appears to have obtained it in North-eastern Russia, and the Russian naturalists do not appear to have distinguished between the present species and *Phylloscopus proregulus*. The only other records of its occurrence in Europe are as follows:—One was, according to Mr. Gould (*l. c.*), obtained within a mile of Cheltenham on the 11th October, 1867, by Mr. J. T. White; a male was, according to Herr Crommelin (*l. c.*), obtained at Leyden, in Holland, on the 15th September, 1861, and lived eight days in captivity; and Herr von Pelzeln (*l. c.*) states that a specimen, which Professor Newton identifies with the present species, was obtained near Vienna in 1836, and lived for half a year in the museum there. According to Signor Lanfossi (*l. c.*) a specimen was obtained in the Milan territory in October 1847; but Salvadori expresses great doubt respecting this occurrence, as resting only on the word of a dealer not too trustworthy in his statements. Signor Perini states that it is common in the Veronese territory; but Salvadori considers that the bird referred to by that gentleman is not the present species, but a small race of the Chiffchaff.

The present species was obtained by Canon Tristram at Jericho, but does not appear to have been obtained by any other naturalist in Asia Minor or Palestine, nor has it been recorded from Africa. In Asia it occurs in Turkestan, Siberia, India, and China. Severtzoff says (Turkest. Jevotnie, p. 65) that it is a partial migrant to Turkestan, and breeds there regularly in the elevated districts. He met with it nesting in the Karatan Mountains at an elevation of about 3000 feet, and in the Thian-shan range up to about 8500 feet, or as high as the birch-growth extended. Its range in Siberia is rather difficult to define, as both Middendorff and Radde looked on the present species and *Phylloscopus proregulus* as being the same bird. The former of these gentlemen says that he found these two species in the Stanowoi Mountains and in the islands of the Sea of Ochotsk. Dr. Radde, who also failed to discriminate between the two species, says that they arrived at the Tarei-nor about the 15th May, and, like the Goldcrests, they remained late in the autumn migration, as he observed them in 1856 in the gardens at Kulussutajefsk from the 15th of August to the 21st September; and he also met with them on the central Onon, and obtained specimens on one of the Onon Islands, near the old fortress, on the 21st September. In the Bureja Mountains he saw them from the 25th August till the early part of September. Dr. von Schrenck, who states that the species was obtained by Mr. Maack on the Upper Amoor, certainly refers to *Phylloscopus superciliosus* only. I have received specimens both of the present species and of *Phylloscopus proregulus* from the neighbourhood of Lake Baikal. Dr. Jerdon (*l. c.*) says that "it is tolerably common in most parts of India during the cold weather, and at all times on the Himalayas. I have got it at Nellore, on the Malabar coast, in Central India, and at Darjeeling; and it also appears to be common about Calcutta." Hodgson records it from Nepâl; and Mr. W. E. Brooks says that he "frequently saw it on the way up from Kaleedoongy to Nynee Tal in April, but never met with the bird at Nynee Tal or at Almorah. . . . Among the many skins of *P. viridanus* I found one of this bird, shot on the 29th of April, 1868, near the top of the Kale-Müt Hill, three miles north of Almorah. It was a solitary bird; and from the bleak place in which I found it, with

hardly any cover, I should say it was on its journey over the hill going further north. The few small scrubby bushes out of which I shot the bird, were only a few yards in circumference; and there were no other near. In the plains this bird is excessively common, no bird more so." Mr. Swinhoe records it as occurring in China, where he met with it at Peking in summer, at Amoy, at Hongkong in February, at Tungchow in September, at Foochow, and common at Hainan in February. He also writes that "in winter it is not uncommon about woods and groves in Formosa, its loud single call-note, 'sweet,' always attracting attention to its presence. It is very rarely in company with others, is lively and constantly in motion in pursuit of its insect food, and seems to be entirely happy in its own resources." Mr. Swinhoe further says that it "summers in North China and Japan."

Until quite lately nothing was known respecting the nidification of the present species, and its eggs were utterly unknown. I received eggs from the Amoor from Dr. Dybowski, through the late M. Jules Verreaux, which were stated to be those of this species; but subsequently I was shown specimens of *Phylloscopus occipitalis* labelled *R. superciliosus*; and the eggs sent, being pure white and not distinguishable from carefully authenticated eggs of *Ph. occipitalis* obtained by Mr. W. E. Brooks, doubtless belong to that species. To Mr. W. E. Brooks appertains the credit of having first obtained authentic eggs of *Phylloscopus superciliosus*. That gentleman, writing to me in the winter of 1870-71 from Etawah, North-west Provinces of India, told me that he was determined to trace this species to its nesting-haunts in Kashmir, and requested me to see the late Dr. Jerdon, who was then in England, and to glean all particulars from him, as he had obtained specimens in Kashmir in full breeding-plumage. This I gladly did, and may give Mr. Brooks's narration of his success in his own words (*Ibis*, 1872, pp. 24-29) as follows:—"By inquiries which Mr. Dresser kindly made at my request of Dr. Jerdon, I learned that the probable date when they were obtained was about the 12th of July, 1867, and that the locality was Gulmerg, in Cashmere. This was conclusive proof that this place was one of the breeding-resorts of both species of *Reguloides* above mentioned. Being entitled to leave, I applied for it, and left for Simla on the 24th of April. While there for a day, I heard the call-note of *Reguloides superciliosus* very frequently. I also heard it on the way to Simla in the pine-woods at Kussowlie. I returned to the plains after I had seen Col. Tytler's museum and had carefully examined his specimen of *Aquila hastata*. Googerat was soon reached; and thence I marched into Cashmere, in which country I did not meet with *Reguloides superciliosus* till I reached the north face of the Ruttun Pir mountain. This hill has an elevation of about 8400 feet. Here the little bird was plentiful; and so were *R. proregulus* and *R. occipitalis*, the latter being in full song. By dissecting females of each species, I ascertained that they would not lay before the end of May at the earliest. *R. proregulus* was still in flocks. In the habit of congregating, and being always on the move from tree to tree, these birds resemble the Titmice, and are equally noisy; but the other *Reguloides* are more silent and solitary.

"I continued my journey to Srinuggur, rather reluctant to leave a place where these birds were so plentiful. At Srinuggur I met Capt. Cock, who, like myself, was also upon a nesting-expedition, and equally intent upon solving the problem as to where the *Reguloides* bred.

"We were too early for their eggs, and in the mean time went up the Scind valley. When we had gone two marches, finding that the gorge became very rocky and narrow, with but very

few birds, I decided upon retracing my steps and making the best of my way to Gulmerg. I did so; but Capt. Cock continued his journey to Sonamerg, intending afterwards to join me at Gulmerg. I arrived there on the 31st of May, at about 10 o'clock; and by 4 o'clock in the afternoon I had three nests of *Reguloides superciliosus* in my possession, each containing five eggs. On the very same day Capt. Cock had also taken the eggs of this bird at Sonamerg.

"Gulmerg is one of those mountain-downs, or extensive pasture-lands, which are numerous on the tops of the range of hills immediately below the Pir Punjal range, which is the first snowy range. It is a beautiful mountain-common, about 3000 feet above the level of Srinuggur, which latter place has an elevation of 5235 feet. This common is about three miles long, and about a couple of miles wide, but of very irregular shape. On all sides the undulating grass-land is surrounded by pine-clad hills; and on one side the pine-slopes are surmounted by snowy mountains. On the side near the snow the supply of water in the woods is ample. The whole hill-side is intersected by small ravines, and each ravine has its stream of pure cold water—water so different from the tepid fluid we drink in the plains. In such places where there were water and old pines *Reguloides superciliosus* was very abundant. Every few yards was the domain of a pair. The males were very noisy, and continually uttered their song. This song is not that described by Mr. Blyth as being similar to the notes of the English Wood-Wren (*P. sibilatrix*), but fainter. It is a loud double chirp or call, hardly worthy of being dignified with the name of song at all. While the female was sitting, the male continued vigorously to utter his double note as he fed from tree to tree. To this note I and my native assistants paid but little attention; but when the female, being off the nest, uttered her well-known 'tiss-yip,' as Mr. Blyth expresses the call of a Willow-Wren, we repaired rapidly to the spot, and kept her in view. In every instance, before an hour had passed, she went into her nest, first making a few impatient dashes at the place where it was, as much as to say, 'there it is; but I don't want you to see me go in.'

"When a nest was found by one of the natives, the eggs were not removed till I had seen the bird come out of the nest, and had heard her well-known note. From the first few nests I shot the females: but this was needless slaughter; for the note is so peculiar and decided that no other mode of authentication is necessary.

"In the woods frequented by this bird at Gulmerg, the only other *Reguloides* were *R. occipitalis* and a few of *R. proregulus*. Of *Phylloscopi* the only species were *P. magnirostris*, very scarce, and *P. tytleri*, described above, equally scarce.

"The nest of *Reguloides superciliosus* is always, so far as my observation goes, placed on the ground, on some sloping bank or ravine-side. The situation preferred is the lower slope near the edge of the wood, and at the root of some very small bush or tree—often, however, on quite open ground, where the newly growing herbage was so short that it only partially concealed it. In form it is a true Willow-Wren's nest, a rather large globular structure, with the entrance at one side. Regarding the first nest taken, I have noted that it was placed on a sloping bank, on the ground, among some low ferns and other plants, and close to the root of a small broken fir tree, which, being somewhat inclined over the nest, protected it from being trodden upon. It was composed of coarse dry grass and moss, and lined with finer grass and a few black hairs. The cavity was about two inches, and the entrance about one and a half inch in diameter.

About twenty yards from the nest was a large, old, hollow fir tree; and in this I sat till the female returned to her nest. My attendant then quietly approached the spot, when she flew out of the nest and sat on a low branch two or three yards from it. Then she uttered her 'tiss-yip,' which I know so well, and darted away among the pines. My man retired, upon which she soon returned; and having called for a few minutes in the vicinity of the nest, she ceased her note and quickly entered. Again she was quietly disturbed, and sat on a twig not far from the nest. I heard her call once more, and then shot her. There were five eggs, which were slightly incubated.

"The capture delighted me; but I felt sorry that I had shot her off her valuable eggs. I was much struck with the very worn state of her plumage; the yellow and the olive were so faded, and the bars on the wing worn. The newly moulted autumnal bird is very different. Few birds fade so much and lose colour to the extent that this little bird does. I took two other nests that same day (31st of May), also a nest of *Reguloides occipitalis*, and one of *Siphia leuc melanura*. In the mean time Captain Cock had reached Sonamerg, which proved to be a better place for *Reguloides* than even Gulmerg; and on the same day he took his first nest of *Reguloides superciliosus*. In his letter to me he says, 'Now for *R. superciliosus*. I took my first nest on the 31st, with five eggs, and shot the old bird. This bird builds, in an exactly similar situation as *Abrornis*, a little globular nest, placed on the side of a steep bank, with only the little entrance-hole exposed to view. The nest is composed of dry grass outside, a little moss, and thickly lined with hair of the musk-deer.'

"My second nest was placed on the side of a steep bank, on the ground. The third was similarly placed, and composed of coarse grass and moss, and lined with black horse-hair. In each of these nests the number of eggs was five.

"Another nest, taken on the 1st of June, with four eggs, was placed on the ground, on a sloping bank, at the foot of a small thin bush. It was composed as usual of coarse dry grass and moss, and lined with finer grasses and a few hairs. The eggs were five or six days incubated. Another nest, with four eggs, was placed on the ground, under the inclined trunk of a small fir. The same materials were used. Another nest containing four eggs was placed on a sloping bank, and quite exposed, there being little or no herbage to conceal it. It was composed as before, with the addition of a few feathers in the outer portion of the nest. Another nest was at the roots of a fern growing on a very steep bank. The new shoots of the fern grew up above the nest; and last year's dead leaves overhung it and entirely concealed it. Another was placed on a sloping bank, immediately under the trunk of a fallen and decayed pine. On account of irregularities in the ground, the trunk did not touch the ground where the nest was by about two feet. This was again an instance of contrivance for the nest's protection. It was composed of the same materials as usual.

"Another was among the branches of a small shrub, right in the centre of the bush, and on the ground, which was sloping as usual. Another nest, with four eggs, taken on the 3rd of June, was placed in the steep bank of a small stream only three feet six inches above the water.

"The above examples will give a very fair idea of the situation of the nest; and it now remains only to describe the eggs, which average 0.56 in. long by 0.44 in. broad. The largest egg which was measured was 0.62 long and 0.45 broad; and the smallest measured 0.52 long

and 0.43 broad. The ground-colour is always pure white, more or less spotted with brownish red—the spots being much more numerous, and frequently in the form of a rich zone or cap, at the larger end. Intermixed with the red spots are sometimes a few of purple-grey. Other eggs are marked with deep-purple-brown spots, like those of the Chiffchaff, and the spots are also intermingled with purple-grey. Some eggs are boldly and richly marked, while others are minutely spotted. The egg also varies in shape; but as a general rule they are rather short and round, resembling in shape those of *P. trochilus*. In returning from Cashmere, on the south face of the Pir Punjal mountain, and close to the footpath, I found, on 15th June, a nest of this bird with four young ones. This nest was placed in an unusually steep bank. Half an hour after finding the nest, and perhaps a thousand feet lower down the hill, I stood upon a mass of snow which had accumulated in the bed of a mountain-stream.”

I have before me a large series of the eggs obtained by Mr. W. E. Brooks, but cannot add any thing to the very careful description he has given of them. In size they vary from $\frac{4.3}{8.0}$ by $\frac{3.4}{8.0}$ inch to $\frac{4.6}{8.0}$ by $\frac{3.6}{8.0}$ inch.

The specimens figured are the two birds described, in spring and autumn plumage, and are in my own collection.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a, ♂ *ad.* Lake Baikal, May 22nd, 1869 (*Dybowski*). *b*, ♂. Darasun, Dauria, August 29th, 1870 (*Dybowski*).
c, ♂. Etawah, N.W. India, September 30th. *d*, ♂. Etawah, October 16th, 1871 (*W. E. Brooks*). *e*, ♀.
 Etawah, March 2nd, 1870 (*W. E. B.*). *f*, ♂. Amoy, April 5nd, 1858 (*Swinhoe*).

E Mus. Lord Walden.

a, *b*, *c*, *d*. Kashmir, July 1867 (*Dr. Jerdon*). *e*, ♀. Maunbhoom, December 16th, 1864 (*R. C. Beavan*).
f, ♂. Maunbhoom, February 1865 (*R. C. Beavan*).

E Mus. H. B. Tristram.

a, ♀. Jericho, January 1st, 1864 (*H. B. T.*). *b*. Himalaya. *c*. India. *d*, ♂. Etawah, October 30th, 1868 (*Brooks*). *e*. Etawah, October 1869 (*Brooks*). *f*, ♂, *g*. Cawnpore, October 6th, 1868 (*Bird*). *h*, ♂, *i*, *k*, ♂. Cawnpore, India, October 1868 (*Brooks*). *l*, ♀. Amoy, February 1861 (*Swinhoe*). *m*, ♀, *n*, ♀. Hongkong, February 1860 (*Swinhoe*).

PHYLLOSCOPUS TRISTIS.

(SIBERIAN CHIFFCHAFF.)

- Sylvia trochilus*, Jerd. Madr. Journ. xi. p. 6 (1840, nec Linn.).
Phylloscopus tristis, Blyth, Journ. As. Soc. Beng. xii. p. 966 (1843).
Regulus tristis (Bl.), G. R. Gray, Gen. of B. i. p. 175 (1848).
Abrornis tristis (Bl.), Bonap. Consp. Gen. Av. i. p. 290 (1850).
Phyllopneuste tristis (Bl.), Gould, B. of Asia, pt. xvii. (1865).
Phyllopseuste tristis (Bl.), G. R. Gray, Hand-list of B. i. p. 215, no. 3048 (1869).

Figura unica.

Gould, B. of Asia, pt. xvii. pl. 16.

♂ *ad.* *Ph. collybitæ* similis, sed minor, corpore suprà magis brunneo, corpore subtùs albicantiore, lineâ superciliari magis cervino tincto, rostro saturatiore et pedibus nigro-fuscis nec pallidè brunneis.

♀ *ad.* mari similis, sed vix minor.

Adult Male (Oxus river, 24th September). Resembles *Phylloscopus collybita*, but is browner in colour on the upper part of the body, and rather whiter on the underparts; the superciliary stripe is more buff in tinge; the bill is darker than in *Ph. collybita*, and the legs are dark blackish brown and not light brown. In size it is less than *Ph. collybita*. Total length nearly 4 inches, culmen 0·44, wing 2·3, tail 1·92, tarsus 0·8. First primary short, only 0·3 longer than the primary-coverts, second 0·3 shorter than the third and a trifle shorter than the seventh; third, fourth, and fifth nearly equal, the fourth being, if there is any difference, the longest.

Adult Female (Etawah). Similar to the male, but a trifle smaller, measuring—culmen 0·44 inch, wing 2·2, tail 1·88, tarsus 0·78.

Young Female (Kischkin, Ural, 9th August). Resembles the adult; but the plumage is softer and looser in texture.

Obs. Like our Chiffchaff the present species has the summer plumage somewhat greener than that worn in the autumn; but it is always browner and duller than *Phylloscopus collybita*.

THIS, the eastern representative of our common European Chiffchaff, was hitherto only known in its winter quarters, and nothing whatever has been recorded respecting its nidification. Indeed, until Messrs. Seeböhm and Harvie-Brown found it breeding on the Petchora river, in Northern Russia, its breeding-haunts were literally unknown. I have for some years possessed examples from the Ural, both in adult and immature (almost nestling) dress, showing clearly that the present species breeds thereabouts; but I have been unable to obtain any precise data respecting its breeding-haunts in that range. It is doubtless met with during the summer season not only in North-east European Russia, but also in Northern Asia; but how far to the eastward, I am

unable to say. In the winter season it migrates southward, and is then met with throughout India. Dr. Severtzoff states (Turk. Jevotnie, p. 126) that it is "only a migrant in Turkestan, as also on the Lower and Central Ural and the Kirghis steppes, and has been sent to the Moscow Museum from Irkutsk." Dr. Henderson says (Lahore to Yarkand, p. 219) that he obtained numerous specimens, one of them a nestling, at Ladák in July; and Mr. A. O. Hume adds the following note:—"In this latter country, at least, some of the birds which throng our Indian groves during the cold season doubtless breed. Other specimens, one of them also immature, were procured early in August in the Karakash valley; and here also this species probably nests. This bird, therefore, like so many other apparently feeble-winged species, is found on both sides of the vast irregular Karakoram mountain-series, a chain 140 miles in width, and the lowest points of which are 13,000 feet above the sea-level. The passes are nearly 19,000 feet; and to this latter height the birds must ascend if they do, as seems probable, cross from Lé to Yarkand." In India it is a common winter visitant. Mr. Blanford states that he did not meet with it in Persia, but it was common throughout Baluchistan; and Mr. A. O. Hume speaks of it as being common enough in the cabul trees on the banks of all the larger rivers of Sindh, but comparatively scarce inland. Dr. Jerdon says (B. of India, ii. p. 190) that it "appears generally spread throughout India during the cold weather. Blyth says that it is abundant in Lower Bengal in swampy places with bushes, or occasionally in groves of trees. I have seen it perched among some reeds on the banks of a stream, now and then alighting on a stone in the water, and making short sallies after insects in the air, or seizing one in the sand of the rivulet." Blyth says that he also found it abundant in a mango tope near Hooghly, where there was no marshy ground in the immediate vicinity. Mr. V. Ball (Stray Feathers, ii. p. 414) says that it occurs, but is not common, in Chota Nagpur, and has been obtained at Manbhum, Singhbhum, and Lohardugga. It is also said to occur as far east as Thibet.

Messrs. Seebohm and Harvie-Brown have been fortunate enough not only to discover, as above stated, the present species in the extreme north of European Russia, but to procure its nest and eggs. Mr. Seebohm has kindly furnished me with the following notes on its habits and nidification as observed by him and Mr. Harvie-Brown:—"In a country where winter freezes up almost all insect life for nearly eight months of the year, as it does in the valley of the Lower Petchora, the breeding-time of the soft-billed birds of passage is very limited, and they consequently arrive pretty nearly *en masse*. At Ust Zylma we noted the arrival of fifteen insectivorous birds, nearly the last of which was the Siberian Chiffchaff; but as they all arrived during the eleven days from the 12th to the 23rd of May, too much importance must not be attached to the order of migration. This is more especially the case with very local and comparatively rare birds like this species, which might easily escape detection for some days after their arrival. The exact date at which migratory birds reach their breeding-grounds in the Arctic regions will doubtless depend upon wind and weather to a greater degree than in more southerly latitudes.

"In the year 1875, when my friend Mr. Harvie-Brown and I made our trip to Siberia in Europe, the spring was sudden and short. Up to the 8th May the weather can be described as nothing but winter, hard frost, or an occasional snow-storm. The 9th and two following days were hot; the snow melted rapidly in the sun; but it froze hard at night. During these three days many new species of migratory birds arrived. On the 12th the first thin-billed birds of

passage were seen, and, for the first time since Christmas, it rained. On the 14th and 15th there was a return of frost; but on the 16th summer set in in earnest, the snow began to thaw continuously, and migratory birds to arrive in greater numbers. For some days we added new species of birds to our list every time we strolled out. The snow began to disappear in places, and, where it was very deep, became impassable even with snow-shoes; and the water under the ice in the river rose rapidly. On the 20th the Willow-Warbler arrived. On the 21st the ice on the great river Petchora broke up, and marched past our quarters in Ust Zylma for ten days, at the rate of three or four miles an hour, in a stream a mile and a half wide; and on the 22nd we first made the acquaintance of the Siberian Chiffchaff.

“In the neighbourhood of Ust Zylma we only met with this interesting little bird in one valley, where, after the bird’s first arrival, we seldom spent many hours without hearing its cheerful note. A rapid stream, muddy, and swollen with the fast melting snow, ran at the bottom of this valley, winding between deep mud or clay banks, which it was constantly undermining, bringing down here and there large masses of soil and turf with the pine trees growing upon them, which in some places were tumbled together in wonderfully picturesque confusion. Both slopes and the head of the valley were clothed with pines, principally spruce fir, with here and there small open places of moorland.

“The first specimen of the Siberian Chiffchaff which we shot was frequenting some low willows on the ridge looking down into the valley; but the favourite resort of this bird is the topmost branches of the spruce fir, whence its loud *chivit* was generally heard. We made several excursions on our snow-shoes among the pines in this valley before the frost broke up, and were always surprised at the dead silence prevailing in these woods—not a bird to be seen or heard. Even on the 1st May we heard nothing but a solitary Yellowhammer, which essayed to sing, but broke down before its song was half finished; nor did we see any other bird, except a distant Magpie, probably on the look-out for a suitable tree in which to begin a nest. A month later all was changed. The snow was only lying in small patches in one or two very sheltered nooks. The woods were full of life. Down by the brook-side White Wagtails were *chizziting* all day long. Blue-throated Warblers were the leading songsters, filling the woods with a melody of rare richness and variety. The Pine-Grosbeaks far outstripped the Fieldfares and Redwings, which also abounded, in the Thrush-like warble of their notes. Shore-Larks, Lapland Buntings, and Red-throated Pipits were constantly flying over, the latter often stopping by the way and alighting to feed in the valley. The Willow-Warbler sang as perseveringly as it does in our English woods; and every now and then the Siberian Chiffchaff put in a few notes as a comparatively rare treat. How long this valley would be frequented by this bird it is difficult to say. Possibly the diminutive little Warbler would take up its summer quarters in these pine-woods, and breed there; probably, as will hereafter appear, these birds were only resting during migration, waiting for the subsidence of the waters of the annual deluge which submerges their favourite breeding-grounds.

“It is probable that the males arrive first, as all the birds of this species which we shot at Ust Zylma were of that sex. When first arrived they were not nearly so wild as their near relations the Willow-Warblers; but on the arrival of the females, the latter birds became much tamer, whereas we fancied the Siberian Chiffchaffs were more difficult to approach within

gunshot. Compared with the abundance of the Willow-Warblers they were decidedly rare; sometimes we did not see one in a morning's ramble, and at other times we heard three or four. We did not succeed in obtaining more than three specimens at Ust Zylma. We had to shoot them off the top of a spruce fir; and sometimes they lodged in the branches or fell amongst the tangled herbage and dead sticks at the foot, and were lost.

"The 3rd, 4th, and 5th June we spent at Haberiki, about twenty-five miles down the river. There we again met with the Siberian Chiffchaff frequenting the pine-forests. The country round Haberiki was much flatter than that on the east bank of the Petchora, at Ust Zylma, and the woods were much finer. Some of the larches were very old trees, towering above the spruce and pines around them, weird haggard-looking trees, whose leafless tops were clothed with black and grey lichen like a suit of rags, and torn and twisted by the winds into wild fantastic shapes, and a grotesque contorted ramification, reminding one of a sketch by Gustav Doré. The extreme summit of the loftiest of these larches was a favourite perch of the Siberian Chiffchaff. On our first visit to Haberiki we shot one male; and we succeeded in obtaining a second male on the 11th June in the same locality, on our voyage down the river.

"We left Ust Zylma on the 10th June, our principal regret, after having, one might almost say, wintered there since the 14th April, being that we were too early to obtain the nest and eggs of this interesting bird. We hoped, however, to chance upon it in the pine-woods on the banks of the Petchora as we sailed down; but in this we were disappointed. Ust Zylma is about three hundred miles from the sea. There are no islands of any importance for the first five-and-twenty miles, as far as Haberiki. Then follows about a hundred miles of broad river, seldom less than two miles wide, full of islands, in fact an elongated delta; or if one wanted to coin a name for this part of the great river, one might call it the iota of the Petchora, which the arctic circle cuts almost in the centre. We landed on many of these islands, and in different places on the shores. There was abundance of firs, pines, and larches in various localities, but we neither saw nor heard any thing of the Siberian Chiffchaff. Then follows about a hundred miles of real delta, ending with about seventy-five miles of submerged delta or lagoon, a series of shoals and sand banks extending to the Golievski banks, between the promontory of Russki Zavarot and the island of Varandai. The delta proper is full of low, flat islands, principally under water whilst the ice is coming down the river. As the waters subside, these islands become marshes covered over with low willows, full of lakes, and with here and there small open patches of grass. These marshes soon dry up; and grass or, where the willows are densest, *Equiseta* soon cover the mud under the trees.

"From our previous observation we had taken it for granted that the Siberian Chiffchaff was solely a frequenter of pine-forests, and that, now we had got beyond the region of any trees but dwarf willows and creeping birch, we should see no more of it. To our no small astonishment we found it comparatively abundant on the willow-swamps on the islands of the delta for nearly the whole of the hundred miles of its extent. At Alexievka, near the middle of this district, we had abundant opportunity of studying its habits. We shot half a dozen more birds, all males except one. A second female we had already shot soon after entering the delta. We did not meet with this bird in the willow thickets on the tundra; but where these thickets came to the edge of the river, as they occasionally did, we were almost sure to hear its familiar notes.

In these dense thickets it is almost impossible to see a bird far enough off to shoot it without blowing it to pieces; and if by chance you do get a shot, it is almost like looking for a needle in a bottle of hay to seek for your bird amongst the long grass; otherwise we might have obtained many more specimens.

"One of the usual notes of the Siberian Chiffchaff is not badly expressed by the word *chiv'-it*. This is generally repeated two or three times in rapid succession. It is very commonly varied to *chiv-īt'*, *chiv-ēt'*, also repeated rapidly. On one occasion I listened for some time to one of these birds whose note was like *chīng'-chiv-īt*, repeated in rapid succession, and as often as not leaving off with a final *chīng*. Unlike our Chiffchaff this bird has a song, as loud, but not nearly so musical, as that of the Willow-Warbler. It appears, however, to be used only during the courting-season. We heard it both at Ust Zylma and at Haberiki; but we did not hear it after our arrival at Alexievka (on the 19th June). The song is a rapid repetition of its call-note *chiv-īt'*, *chiv-ēt'*, run into a song by the introduction of a few rather more musical notes. Whether the call-note and the song are common to both sexes we were unable to ascertain. All the males, except the first which we shot, uttered the call-note; but we never heard either of the two females utter a sound; and we shot them because they looked small, on the chance of their turning out to be either this species or *P. eversmanni*. We twice heard what may have been the alarm-note of this bird, a single plaintive note, difficult to express on paper. We were not able satisfactorily to determine whether the alarm-note (*hoo-ee*) common to the three British species of this genus is uttered by this bird, though we suspected it on more than one occasion.

"The habits of this species are very similar to those of the rest of the genus. It is very active and restless, especially when feeding. It is then usually silent, frequenting the lower branches of the trees, or seeking its insect food amongst the willows and the underwood, scarcely remaining for more than a second or two upon one twig, reminding one of a Tit, both in its activity and in the positions it assumes. At other times, when singing or uttering its call-note, it remains for some time on one branch, often the topmost spray of a spruce fir or lofty larch, or, in the delta, on a conspicuous branch of a willow a little higher than the rest.

"We did not succeed in finding the nest of the Siberian Chiffchaff. We were soon convinced that it was an utterly hopeless task to attempt to watch the bird on to its nest in the small open places covered with grass, a foot or more high and surrounded by dense willow thickets. The difficulty was immensely increased by the clouds of mosquitoes which generally swarmed in these thickets. Life without a *komarnik* was simply unendurable; and to watch a small bird in such a locality through the mosquito-veil quite as impossible. Our only chance was to stumble upon the nest by accident. Fortunately there were, at the time of our visit to Alexievka, about forty men working upon the island, in the employ of the Petchora Timber-trading Company. These men were *Ismichi* or *Syriani*, from Ust Ishma; and many of them were glad to earn an extra rouble now and then by bird-nesting on holidays and after working-hours.

"All birds breed very late in the delta of the Petchora. The islands are under water until the beginning of June. Consequently all birds breeding upon the islands—Swans, Ducks, Wagtails, Pipits, Warblers, Buntings, Redpoles, Sandpipers, &c. begin to breed somewhere about the same time. The first nest of a *Phylloscopus* was brought to us on the 23rd June. After the first week of July we obtained no eggs of any species on the delta that were not too

much incubated to be worth the trouble of blowing. It was not until the 4th July that we obtained the nest and eggs of the Siberian Chiffchaff. We had spent the morning blowing eggs; and in the afternoon we crossed over to the mainland. Most birds breed somewhat earlier on the tundra, where, after the snow has melted, they are secure from floods. We had not landed many minutes before we shot a Black Scoter off her nest, with six fresh eggs. The Dunlins, Lapland Buntings, Red-throated Pipits, Redpoles, and Yellow-headed Wagtails were busy feeding their young. We found eggs still in a Ring-Dotterel's nest. We watched a Richardson's Skua on to her nest with two eggs, and afterwards a Grey Plover, whose nest contained three eggs. All these eggs were more or less incubated. We returned to Alexievka about midnight. The sun was shining, and the *Ismichi* were returned from their evening's bird-nesting; so we at once installed ourselves in the Company's *kontora*, to receive such of the men as had found any nests. A couple of Red-throated Diver's eggs, with the bird trapped at the nest, was the first arrival. The second was five Pintail's eggs, with down. Then came a man with six Red-necked Phalarope's eggs, and five eggs of Temminck's Stint. He was followed by another with seven Scaup's eggs and a cap full of down. Then a large batch of Long-tailed Duck's down and five eggs were brought us. Lastly, came a man with four nests of *malinka petetski* (small birds), a Sedge-Warbler's, a Red-throated Pipit's, a Willow-Warbler's, and last, and least in size, but not in importance (for in our eyes at that moment it eclipsed the Grey Plover's nest we had taken a few hours before), the much-coveted nest of the Siberian Chiffchaff. The man told us that he had found it in the long grass in one of the small opens between the willow thickets on the island. The nest is domed; or if we take the nests of the common Wren or of the Water-Ousel as types of domed nests, one might call it *semidomed*, like those of the three British species of the same genus. It is composed of dry grass, not particularly neatly constructed, and lined with a profusion of feathers. It contained seven eggs, somewhat incubated. They are, as might be expected, very small, not much more than half the size of those of the Willow-Warbler. The shells are semitransparent; and the eggs looked pinkish before being blown, but afterwards became a pure white, freely spotted with small reddish brown spots, most numerous at the large end, where they are more or less confluent, forming a zone round the egg. They measure $\frac{4.5}{8.0}$ by $\frac{3.2}{8.0}$ inch.

"I have ventured to give this black-legged little Warbler the English name of the Siberian Chiffchaff, which gives some idea of its distribution and nearest affinities."

I am also indebted to Mr. W. E. Brooks for the following information respecting the present species in India:—"This species," he writes, "is a regular cold-weather visitant to the plains of India. I have often noticed it in the grain-fields far away from trees; and, as a rule, this species affects trees less than other *Phylloscopi*. It is partial to damp situations, and at the same time is found in dry localities where there is little or no cover, but occasional brushwood or long grass. It is, like all the others of the group, a lively little bird; ever in motion, and has the true *Phylloscopine* habit of poisoning itself, by means of a rapid motion of the wings, under a leaf or tuft of leaves, in order to facilitate its examination for insects.

"It varies very much in size, and to some slight extent in tone of colour. It can be generally easily distinguished from all its Indian allies by the bright sulphur-yellow axillaries.

"The call-note is a shrill sibilant one, something like that of the common Creeper or Hedge-

Accentor—a single note, rather faint. The song is feeble, but most agreeable, of somewhat the same character as that of *P. collybita*; but, as well as I remember the Chiffchaff's, it is a far more musical song than that bird's. At first I was so much struck with the similarity of the style that I concluded from the song alone the birds were identical. I now remember that the English bird's song is louder, harsher, and more disjointed and broken in character, as well as much less musical. On the other hand the song of *P. tristis* has a charming element of cheerfulness in it, and it could be listened to for hours with increasing pleasure. It commences to sing in January; and as the spring draws on and the new leaves of various trees open out with their flowers, in which this little bird delights, its song becomes increasingly vigorous and animated. In March or early April it leaves for the north. I have seen specimens from Yarkand and from Ladak, in both of which countries it probably breeds. I believe that it also breeds in some few places on the extreme north-east of Cashmere. I have procured it in Kumaon, on its passage; and I have it from Sikhim. It thus appears to be generally distributed in the Indian longitude, as far as I can find out; but while rare towards the north-east, it is abundant in the north-west. It goes far south during the coldest weather, and is even found about Calcutta. In looking over some birds collected by one of the members of the late Yarkand expedition, I noted several examples of this species. The localities and dates were:—Leh, 2nd July, two examples; Karjil, 9th July, four examples; Sonamurg (Cashmere), 18th July, one example. From these few examples we know some of the breeding-places of this species; for in July these little birds have their young hatched. I found the young of *Phylloscopus superciliosus* late in June. It is probable, however, that this little bird, like some of its congeners, also goes in great numbers far to the north, and ought to be found throughout Southern Siberia."

As the present species so nearly resembles the Chiffchaff in coloration and general appearance, though it differs in having black legs, I have deemed it best not to give a coloured illustration; but on an uncoloured Plate will be given outlines of the wings of all the *Phylloscopi*, so as to show their characteristic differences.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a, ♀. Ekaterinburg, June 19th, 1868. *b*, ♂. Ekaterinburg, May 20th, 1872 (*Sabanäeff*). *c*, ♂. Perm, June 24th, 1872 (*Meves*). *d*, ♀. Nikolsk, Ural, August 22nd, 1872. *e*, *juv.* Kischkin, Ural, August 9th, 1872 (*Meves*). *f*, ♂ *ad.* Chimkent. *g*, ♂. Turkestan, April 18th, 1866. *h*, *i*, ♂. Oxus river, September (*Severtzoff*). *k*, ♂. Kalugan, Baluchistan, March 13th, 1870 (*W. T. Blanford*). *l*, ♀. Etawah, N.W. India, November 1st, 1869 (*W. E. Brooks*).

E Mus. H. Seebohm.

a, ♂. Ust Zylma, North Russia, May 23rd, 1875. *b*, ♂. Haberiki, June 11th, 1875. *c*, ♂. Alexievka, June 22nd, 1875. *d*, ♀. Alexievka, July 6th, 1875 (*H. S.*).

E Mus. Feilden and Harvie-Brown.

a, ♂. Ust Zylma, North Russia, May 22nd, 1875. *b*, ♂. Ust Zylma, June 2nd, 1875. *c*, *d*, ♂. Alexievka, North Russia, June 1875. *e*, ♀. Delta of the Petchora, North Russia, June 17th, 1875 (*Harvie-Brown and Seebohm*).



CHIFFCHAFF AND WILLOW-WREN.
Autumn Plumage



1. CHIFFCHAFF.
 PHYLLOSCOPUS COLYBITA

2. WILLOW WREN.
 PHYLLOSCOPUS TROCHILUS

PHYLLOSCOPUS COLLYBITA.

(CHIFFCHAFF.)

? *Motacilla rufa* et *lotharingica*, Bechst. Gemeinn. Naturg. Deutschl. iv. p. 682, tab. xxix. (1795).

Sylvia rufa, Bechst. Orn. Taschenb. i. p. 188 (1802, nec Bodd.).

Ficedula rufa, Koch, Baier Zool. i. p. 160 (1816, nec Bodd.).

Sylvia hippolais, Leach, Syst. Cat. M. & B. Brit. Mus. p. 24 (1816).

Sylvia collybita, Vieill. Nouv. Dict. xi. p. 235 (1817).

Trochilus minor, Forst. Synopt. Cat. p. 14 (1817).

Sylvia abietina, Nilss. K. Vet. Ak. Handl. 1819, p. 115, pl. 5.

Regulus hippolais, Flem. Brit. Anim. p. 72 (1828, nec Linn.).

Phyllopneuste sylvestris, C. L. Brehm, Vög. Deutschl. p. 431 (1831).

Phyllopneuste solitaria, C. L. Brehm, op. cit. p. 432 (1831).

Phyllopneuste pinetorum, C. L. Brehm, ut suprâ (1831).

Phyllopneuste rufa, C. L. Brehm, op. cit. p. 433 (1831, nec Bodd.).

Sylvia loquax, Herbert in White's Hist. of Selborne, p. 55, note (1833).

Trochilus rufa, Rennie, Field Naturalist, i. p. 52 (1833, nec Bodd.).

Sylvia brevirostris, Strickl. Proc. Zool. Soc. 1836, p. 98.

Sylvicola rufa, Eyton, Rar. Brit. B. p. 14 (1836, nec Bodd.).

Phyllopneuste hippolais, Macg. Hist. Brit. B. ii. p. 379 (1839, nec Linn.).

Phyllopneuste brevirostris (Strickl.), Bp. Consp. Gen. Av. i. p. 289 (1850).

Phylloscopus rufus, Salvin, Ibis, 1859, p. 306 (nec Bodd.).

Sylvia (*Phyllopneuste*) *sylvestris*, Meisn. fide Naum. Vög. Deutschl. xiii. p. 429, pl. 369. fig. 1 (1860).

Sylvia (*Phyllopseuste*) *rufa*, G. R. Gray, Cat. Brit. B. p. 50 (1863, nec Bodd.).

Sylvia (*Asilus*) *rufa*, G. R. Gray, Hand-l. of B. i. p. 215. no. 3034 (1869).

Phylloscopus habessinicus, Blanf. Ann. Nat. Hist. ser. 4, iv. p. 329 (1869).

Phylloscopus abyssinicus, Blanf. Geol. & Zool. Abyss. p. 378 (1870).

Phylloscopus brehmi, Homeyer, Erinn. a. d. Samml. Deutschl. Ornith. 1870, p. 48.

Phylloscopus collybita (Vieill.), Newt. in Yarr. B. B. ed. 4, i. p. 437 (1873).

Phyllopseuste rufa, Gieb. Thes. Orn. iii. p. 120 (1877, nec Bodd.).

Bec-fin véloce, French; *Lui piccolo*, Italian; *Bu fula*, Maltese; *Weiden-Laubvogel*, *Weiden-sänger*, German; *Tjif-tjaf*, Dutch; *Gransanger*, Danish and Norwegian; *Gransångare*, Swedish; *Tynnerilintu*, Finnish; *Penochka malaya*, Russian.

Figuræ notabiles.

Werner, Atlas, *Insectivores*, pl. 57; Kjærb. Orn. Dan. taf. 21; Frisch, Vög. Deutschl. taf. 24. fig. 1; Fritsch, Vög. Eur. taf. 19. fig. 15; Naumann, Vög. Deutschl. taf. 80.

fig. 4; Sundevall, Svensk. Fogl. pl. 14. fig. 4; Gould, B. of Eur. pl. 131. fig. 2; id. B. of G. Brit. ii. pl. 66; Schlegel, Vog. Nederl. pl. 74; Bettoni, Ucc. Lomb. pl. 100.

Ad. pileo et corpore suprâ viridi-fuscis vix griseo tinctis, striâ superciliari sordidè flavo-viridi: alis et caudâ griseo-fuscis, plumis extûs viridi-flavido marginatis: capitis lateribus flavido-fuscis et flavo-cervino notatis: gulâ, gutture et corpore subtûs flavo-albidis, hypochondriis cervino lavatis: axillaribus, subalaribus et tibiis flavidis: rostro et pedibus saturatè fuscis: iride fuscâ.

Adult Male (Guiken, Asia Minor). Upper parts generally brown, tinged with grey, and washed with yellowish green; a superciliary stripe over the eye dull yellowish green; wings and tail greyish brown, the feathers margined externally with yellowish green; sides of the head lighter than the upper parts and marked with yellowish buff; underparts yellowish white, the flanks washed with buff; axillaries, wing-lining, and thighs yellow; bill and legs dark brown; iris brown. Total length about 4.75 inches, culmen 0.4, wing 2.55, tail 2.05, tarsus 0.8; third and fourth primaries longest, the sixth, seventh, and eighth graduating shorter in succession, the second rather shorter than the seventh.

Adult Female. Resembles the male, but is rather smaller in size.

Obs. The variation in the colour of the plumage is, as a rule, not great; but the autumn dress of both old and young, more especially of the latter, is more buffy yellow in tinge than in examples killed in the breeding-season.

COMMON in the summer in the north of Europe, the Chiffchaff passes south to winter, and is to be met with in Southern Europe and North Africa during the cold season. It is also found in winter in the Canaries and on Teneriffe; and its range extends eastward to Persia.

In Great Britain it arrives very early in the spring, and remains frequently as late as October, some few individuals even wintering with us in a mild season. Montagu saw it in the winters of 1806–1807 and 1808–1809 in Devonshire. Professor Newton states that, according to Mr. Rodd, a few examples remain in Cornwall throughout most winters; and Lord Lilford informed him that he had twice seen this bird in Northamptonshire in December. I myself have heard its easily recognizable note during bright warm weather late in January 1872 at South Norwood, near the Crystal Palace. In some parts of England, however, Professor Newton remarks, it is not usually heard till late in April or early in May. It breeds regularly in every county in England and throughout Wales, but becomes less numerous towards the north. In most places it is said to be less numerous than the Willow-Wren; but in some of the western and southern counties it is certainly the commoner of the two species. Mr. Stevenson writes (B. of Norf. i. p. 133), in Norfolk it is “one of our earliest summer visitants, and breeds with us, arriving in March and remaining till October; and it is not unusual to hear at the same moment the note of the Chiffchaff and the clatter of the Fieldfare, the one already arrived in its summer quarters before the other has left us for its northern breeding-grounds. According to Messrs. Gurney and Fisher, a low bush, frequently of furze, appears to be a favourite locality for the nest of the Chiffchaff. As many as four have been found in such places within a few yards.”

In the north of England it becomes rarer. Mr. Hancock speaks of it as being only a

tolerably common spring and autumn migrant in Northumberland and Durham; and, according to Mr. Robert Gray (B. of W. of Scotl. p. 98), "this Warbler appears to be very local in most parts of Scotland. It is not uncommon in roadside plantations near Glasgow; and a few also visit the district of Loch Lomond. Deeside and Braemar are localities mentioned by the late Dr. Macgillivray in his 'Natural History of Deeside,' which was printed by command of the Queen; but in that district it appears to be rare. According to Dr. Turnbull it is also rare in East Lothian. Mr. Anderson has procured specimens at Girvan, in Ayrshire; and Mr. Brown informs me that it breeds in Dunmore grounds, Stirlingshire, and that he had seen its nest, taken in 1866 by Mr. Thompson, who believes that it nests there regularly. Writing from Aberdeenshire, Mr. Angus states that on the 8th of May, 1865, he received a Chiffchaff, very much destroyed by shot, from Birse, Deeside, and that in May of the year following he observed this species near Aboyne Castle. He noticed it again in June 1867 at Ward House. The species has, according to Mr. Shearer, been seen for two successive seasons near Wick, in Caithness-shire. In the Outer Hebrides the Chiffchaff frequents Rhodil, in Harris, as I have been informed by Mr. Elwes, who procured a specimen there in May 1868. A manuscript note in Baikie and Heddle's work mentions the occurrence of a single specimen in Orkney in 1850; and Dr. Saxby also includes the species as rare in his Shetland lands. One was seen by that excellent observer in 1864 so late as the 21st of November."

In Ireland, Thompson remarks, the Chiffchaff is a regular summer visitant to certain localities from south to north, but differs from the Willow-Wren in being very partially, instead of generally, distributed, this remark applying not only to the island at large, but to limited districts.

It has not been met with in Iceland or the Færoes; but in Norway it is a summer resident up to Helgeland, being, Mr. Collett informs me, abundant throughout the northern portions of Trondhjems Amt. In June 1871 he met with it on the Bindalsfjord, in Helgeland, in 65° 10' N. lat., above which it has not been known to occur. Sundevall writes that in Sweden it is not met with in Lapland proper, and does not pass beyond the fir-growth, but occurs in Skellefteå and at Lycksele. From here it is common some distance to the south; but at Upsala and Stockholm and south of those places it only occurs in the autumn, during migration, being generally seen at Stockholm late in September, and in Skåne in October and November. I often met with the Chiffchaff when in Finland, where it is most generally to be seen in the northern and central districts. How far north it ranges in Russia I cannot definitely say, but probably to a high latitude, though its range does not extend so far as that of the Willow-Wren. Mr. Sabanäeff informs me that it is common in Central Russia, especially in the Jaroslaf Government, and he found it generally distributed throughout the Ural up to Bogosloffsk, though more numerous on the south-western than on the south-eastern slopes. Mr. Jacovleff says that it is abundant at Astrachan; but Mr. Artzibascheff does not include the Chiffchaff in his list. In Poland, according to Mr. Taczanowski, it is very common from April to the latter portion of September; and Meyer states that it is not rare in the fir-woods of Livonia in the summer. Throughout the whole of North Germany it is generally distributed during the breeding-season, and is, as Mr. Schalow remarks, more numerous than it used formerly to be in that portion of Europe. Borggreve says that it arrives as early as the end of March and is amongst the hardiest of the Warblers; and Mr. Collin writes that it is one of the first of

the Warblers which appears in the spring in Denmark, and may be seen in the first half of April. A few remain to breed; but most pass northward in May and return again in September and October on their passage to their winter quarters. Throughout Holland, Belgium, and France it is a common summer resident, and is said also to be numerous in Portugal. Dr. Rey, however, remarks that he did not see any after the 23rd of March, although when he commenced collecting near Lisbon on the 12th of that month he found this species very abundant.

In Southern Spain it is sedentary, and, according to Colonel Irby (Orn. Str. Gibr. p. 89), is most common near Gibraltar from November to March. In Italy the Chiffchaff is found everywhere in suitable localities during the summer, and winters in some parts, summering also in Sardinia, where Mr. A. B. Brooke believes that some few individuals must remain throughout the winter, as he has seen them in February and March. In Sicily it is resident, frequenting the mountains in the summer and descending to the plains in winter. In Malta, Mr. Wright says (Ibis, 1864, p. 69):—"Arriving in autumn, after passing the summer in Europe, the Chiffchaff remains with us all the winter. During that season until spring, when it is joined by new comers, it is one of the most familiar birds, being generally spread over the country, in gardens, orange-groves, and places where the carob and other trees afford it shelter and insect food."

It breeds in Southern Germany, but in many localities it is said to be rarer than the Willow-Wren. In Austria, the countries skirting the Danube, and in Turkey it is numerous in summer, as also in Greece and the Ionian Islands, where it also winters. Strickland, Dr. Krüper, and Mr. C. G. Danford all record it from Asia Minor; and the first of these naturalists shot it near Smyrna in November. Canon Tristram met with it in Palestine, which country it leaves by the end of February; and Mr. Wyatt found it as numerous in the peninsula of Sinai as the Willow-Wren.

According to Von Heuglin it is a common migrant in Egypt, Arabia, &c., ranging south to Abyssinia, Kordofan, and Bahr el Abiad. It arrives in vast numbers with its congeners, and winters here and there in North-east Africa. In Algeria, Mr. Taczanowski says, it is rather rare than otherwise. Mr. Salvin states that it appears to winter there, and he obtained examples near El Djem in March. Mr. Tyrwhitt Drake met with it at Tetuan, where it is seldom seen; and, according to Favier, it is nearly as common as *Phylloscopus trochilus* near Tangier, wintering there, arriving in October and November, and leaving for Europe again in February, March, and April.

Dr. Carl Bolle states that it is resident in the Canaries; and Mr. Godman says (Ibis, 1872, p. 174), it is "common in Teneriffe, Palma, and Gran Canary, where it chiefly inhabits the upper and heathy districts, though I shot some specimens in a garden at Orotava. They are identical with our Chiffchaff. I have six or seven skins from Teneriffe."

To the eastward the Chiffchaff is found as far as Persia, where Mr. Blanford obtained it at Shiraz; but beyond that I cannot trace it, and it appears to be replaced by *Phylloscopus tristis*.

Next to the Golden-crested Wren the Chiffchaff is one of the smallest of the European Warblers, and, like that species, it frequents the foliage of tolerably high trees, being almost in continual motion in search of its insect food. It closely resembles the Willow-Wren in its general habits; but its movements are somewhat quicker, and in its flight it is rather swifter.

When it traverses any distance between grove and grove, it flies in a succession of jerky bow-shaped bounds, and appears to be in a great hurry. Uneasy and restless, it is not companionable either towards others of its own species or towards small birds which frequent the groves where it is. It affects both greenwood- and conifer-groves, and especially those where conifers and greenwood trees are intermixed. It is also to be found in gardens, especially such as contain plenty of bushes where it can find insects, also in orchards, and occasionally in places overgrown with high weeds. It appears to inhabit the loftier trees chiefly in the summer, and is more frequently to be seen in low bushes, and even on the ground, in the spring and autumn. Its food consists almost exclusively of insects of various kinds, especially such as are to be met with amongst the foliage of trees and bushes; but in the autumn, when insect food is scarce, it is said even to feed to some extent on small berries. It either picks the insects or larvæ off the leaves and branches of the trees and bushes, occasionally searching for food on the ground, or else it will catch the gnats or flies on the wing. Its note, which is uttered whilst it is hopping about amongst the branches, is weak but shrill, and resembles the syllables *chiff-chaff*, *chiffy-chaffy*, or *cheep-cheep*, *cheep-cheep*, uttered at short intervals.

The nest is usually placed on the ground, in a bank, or behind a stump, amongst tolerably dense grass or weeds, and only very rarely above the ground. Doubleday informed Yarrell that he found a nest placed in dead fern at least two feet higher than the ground; and Hewitson mentions another instance of a nest being built in some ivy against a garden-wall. Usually the nest is placed in an open spot in a wood or on the edge of a grove, never in the depths of the forests, where the ground is but scantily covered with tangled herbage. The nest of the Chiffchaff is oven-shaped or nearly round, semidomed, with a large opening at the side, and is externally constructed of dried leaves, grass bents, moss, &c., and neatly and closely lined with plant-cotton, feathers, and hair, feathers being more frequently used than any other material. A very beautiful nest sent to me from Norway by Mr. Robert Collett is constructed entirely of very blanched grass-straws, and lined with small white feathers. The eggs, from five to six in number, are white, transparent so that the yolk shows through, and are somewhat sparingly spotted and dotted with deep purplish red, while now and again there is a small violet-grey shell-spot. In size they average about $\frac{24}{40}$ by $\frac{17}{40}$ inch.

The variation in size in specimens of the Chiffchaff from various localities is by no means inconsiderable. When Mr. Seeböhm was working at his paper on the *Phylloscopi* (Ibis, 1877, pp. 66–108) I measured and examined a large series of specimens from various localities, and quite agree with him in uniting *Phylloscopus brehmi*, *Phylloscopus brevirostris*, and *Phylloscopus abyssinicus* with the present species. The first of these three is, as a rule, somewhat smaller than the general run of examples of *Phylloscopus collybita*, but differs in no other respect; and males of this southern form are about equal in size to females from the north of Europe. The general variation in size appears to be, in males—wing 2.25 to 2.55 inches, tail 2.0 to 2.2; and in females—wing 1.95 to 2.3, tail 1.7 to 2.0.

The specimens figured are an adult male, in spring plumage, from Asia Minor, and an adult male, in autumn dress, from Piedmont, both of which are in my own collection.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a, ♂. Altenkirchen, Germany, June 6th, 1876 (*Sachse*). *b*, ♂, *c*, ♀. Christiania, Norway, May 18th and 20th, 1874 (*Collett*). *d*, *e*, ♂. Skåne, Sweden, April 29th, September 29th, 1875 (*Meves*). *f*, ♂, *g*, ♀. Piedmont, April 2nd, March 27th, 1870 (*Salvadori*). *h*, *i*, ♂, *j*, ♀, *k*. Ortakeuy, Turkey, October 12th and 24th, 1871, October 8th, 1868 (*Robson*). *l*, ♂, *m*, ♀. Maslak, Turkey, October 2nd and 8th, 1871 (*Robson*). *n*, ♂. Guiken, Asia Minor, October 4th, 1865 (*Robson*).

E Mus. H. Seebohm.

a, ♀. Siebenbürgen (*Schlüter*). *b*, ♂. Smyrna, Asia Minor, December 2nd, 1871 (*Krüper*).

E Mus. Brit. Reg.

a, *b*, *c*, ♂, *d*, ♀. Bujukdere, Turkey, October 20th and 24th. *e*, ♂, *f*, *g*, ♀. Thebes (*Dr. Adams*). *h*, ♀, *i*. Jericho (*Tristram*).

E Mus. Howard Saunders.

a. Lundy Island. *b*. Usern, Switzerland. *c*, ♀. Valencia, November 19th. *d*, ♂. Malaga, December 24th. *e*, ♀. Rio Genil, Granada, January 1871.

E Mus. H. B. Tristram.

a. Durham, August 17th, 1866 (*J. H. Gurney*). *b*, ♂. Sarepta, December 2nd, 1863 (*Möschler*). *c*. Algiers, January 19th, 1856 (*H. B. T.*). *d*. Egypt. *e*, ♂. Palestine, January 13th, 1864. *f*. Palestine, February 3rd, 1872. *g*, ♂. Sidon, December 1st, 1863 (*H. B. T.*). *h*, ♂, *i*, *k*, ♀, *l*, ♂. Engedi, January 21st, 1864 (*H. B. T.*). *m*, *n*, *o*, ♂, *p*, ♀, *q*. Jericho, January 4th, 1864 (*H. B. T.*). *r*. Engedi, February 3rd, 1872.

PHYLLOSCOPUS TROCHILUS.

(WILLOW-WREN.)

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- Ficedula asilus*, Briss. Orn. iii. p. 479 (1760).
Motacilla trochilus, Linn. Syst. Nat. i. p. 338 (1766).
Sylvia trochilus (L.), Scop. Ann. I. Hist. Nat. p. 160. no. 238 (1769).
Le Pouillot ou Le Chantre, Buff. Hist. Nat. Ois. v. p. 344 (1778).
Motacilla fitis, Bechst. Gemeinn. Naturg. Deutschl. iv. p. 678 (1795).
Sylvia fitis, Bechst. Orn. Taschenb. i. p. 187 (1802).
Ficedula fitis (Bechst.), Koch, Baier. Zool. i. p. 159 (1816).
Sylvia flaviventris, Vieill. Nouv. Dict. xi. p. 241 (1817).
Trochilus medius, Forst. Synopt. Cat. p. 15 (1817).
Phylloscopus, Boie (*Sylvia trochilus*, L.), Isis, 1826, p. 972.
Regulus trochilus (L.), Flem. Brit. Anim. p. 72 (1828).
Curruca viridula, Erh. Symb. Phys. fol. 66 (1829).
Phyllopneuste arborea, C. L. Brehm, Vög. Deutschl. p. 427 (1831).
Phyllopneuste fitis (Bechst.), C. L. Brehm, op. cit. p. 427 (1831).
Phyllopneuste acredula, C. L. Brehm, op. cit. p. 428 (1831).
Phyllopneuste trochilus (L.), C. L. Brehm, op. cit. p. 429 (1831).
Sylvia melodia, Blyth, in Rennie's Field Naturalist, i. p. 425 (1833).
Sylvicola trochilus (L.), Eyton, Cat. Brit. B. p. 13 (1836).
Ficedula trochilus (L.), Keys. & Blas. Wirbelth. Eur. p. 56 (1840).
Sylvia icterina, Eversm. Add. Zoogr. Rosso-As. fasc. iii. p. 14 (1842, nec Vieill.).
Sylvia angusticauda, Gerbe, Faune de l'Aube, p. 139, fide Degl. Orn. Eur. i. p. 548 (1849).
Sylvia tamaricis, Crespon, Faune Mérid. i. p. 209, fide Degl. ut suprà (1849).
Phyllopneuste eversmanni, Bp. Consp. Gen. Av. i. p. 289 (1850, nec Midd.).
Phyllopneuste septentrionalis, C. L. Brehm, Vogelfang, p. 232 (1855).
Phyllopneuste gracilis, C. L. Brehm, ut suprà (1855).
Phylloscopus trochilus (L.), Salvin, Ibis, 1859, p. 306.
Sylvia (Asilus) trochilus (L.), G. R. Gray, Hand-l. of B. i. p. 214. no. 3032 (1869).
Phyllopneuste major, Tristr. Ann. Nat. Hist. p. 29 (1871, nec Forst.).
Phylloscopus gaetkei, Seebohm, Ibis, 1877, p. 92.
Phyllopseuste trochilus (L.), Gieb. Thes. Orn. iii. p. 121 (1877).

Pouillot-fitis, French; *Folosa*, Portuguese; *Lui grosso*, Italian; *Bu fula*, Maltese; *Simriz*, Moorish; *Fitis-Laubvogel*, *Fitissänger*, German; *de Fitis*, Dutch; *Lovsanger*, *Spurve-konge*, Danish; *Lovsanger*, Norwegian; *Löfsångare*, *Skogsknett*, Swedish; *Pajukerttu*, Finnish.

Figuræ notabiles.

D'Aubenton, Pl. Enl. 651. fig. 1; Werner, Atlas, *Insectivores*, pl. 55; Kjærbo. Orn. Dan. taf. xxi.; Fritsch, Vög. Eur. taf. 19. fig. 8; Naumann, Vög. Deutschl. taf. 80. fig. 3; Gould, B. of Eur. pl. 131. fig. 1; id. B. of G. Brit. ii. pl. 65; Schlegel, Vog. Nederl. pl. 73; Roux, Orn. Prov. pl. 288.

Ad. capite et corpore suprâ griseo-fuscis pallidè viridi lavatis: uropygio magis flavo-viridi: alis et caudâ saturatè griseo-fuscis, plumis extûs angustè flavo-viridi marginatis: remigibus vix albido apicatis: striâ superciliari flavo-viridi: gulâ, gutture et corpore subtûs albis flavido tinctis: pectore cum hypochondriis cervino tinctis; rostro et pedibus fuscis: iride fuscâ.

Adult Male (Hampstead, 20th April). Upper parts generally greyish brown with a pale greenish tinge; rump more of a yellowish-green tinge; wings and tail dark greyish brown, the feathers externally margined with yellowish green; quills narrowly tipped with dirty white; over the eye a narrow greenish-yellow superciliary streak; chin, throat, and underparts white washed with yellowish, the breast and flanks tinged with buff; legs and beak dull brown; iris brown. Total length about 5 inches, culmen 0.42, wing 2.65, tail 2.15, tarsus 0.82; bastard quill medium, the exposed part measuring 0.58, third quill longest, the fourth scarcely shorter, the second intermediate between the fifth and sixth.

Adult Female. Rather less than the male, but otherwise undistinguishable.

Obs. In Great Britain and in Central and temperate Europe the difference in plumage at different seasons of the year is not great; but in the autumn, birds of the year especially have the underparts much more buff in tinge. In high latitudes, however, in full summer dress, the birds appear very bleached in coloration, and in some every trace of yellow and green has disappeared, except a faint tinge on the axillaries, wing-lining, and thighs. I do not possess a specimen in this stage of plumage; but Mr. Seebohm has several in his collection.

THE Willow-Wren is found throughout Europe generally, and in Asia as far east as the Jenesei river and Persia. In winter it passes south in Africa as far as the Cape of Good Hope; and some few even remain to breed in North-western Africa, though most of those which winter there go over to Europe in the spring.

In Great Britain it is a summer resident, arriving late in March or early in April, remaining with us to breed, and leaving again in September. It is generally distributed and common throughout the whole of England, but is said to be less numerous in the western than in the eastern counties. It breeds in every county; and, as Professor Newton remarks, "there is good reason for believing that, being one of the species highly favoured by the spread of plantations and the effects of strict game-preservation, its numbers have generally increased of late years throughout the country." In Scotland it nests regularly up to Ross, Sutherland, and Caithness, and occurs now and then in Orkney, though it has not been recorded from the Hebrides. Dr. Saxby, however, saw one in Shetland in October 1865.

In Ireland, according to Thompson, the Willow-Wren is a regular summer visitant, and commonly dispersed over suitable localities throughout the island.

According to Mr. H. C. Müller it is a rare autumnal straggler to the Færoes; but it is found in Scandinavia nearly to the North Cape.

In Norway, Mr. Collett says, it is numerous distributed throughout the country, and breeds from the Hvalöer up to the Russian frontier, on the islands off the coast, and in the fells up to the willow-region. It arrives in Southern Norway about the first week in May, and leaves from the middle to the end of September. In 1862 Mr. Collett shot one as late as the second of October.

In Sweden it breeds in suitable localities from Skåne up into Lapland; and Pastor Sommerfelt speaks of it as being one of the commonest Warblers in East Finmark, where it is a regular summer resident. In Finland I used often to see this bird, and met with it in every part of the country I visited; and Von Wright informed me that it is certainly one of the commonest of the Warblers. In Russia its range extends also very far north: Meves met with it between Petersburg and Archangel; and Messrs. Seebohm and Harvie-Brown, in their notes on the ornithology of the Lower Petchora river, say (*Ibis*, 1876, p. 215):—"The Willow-Wren is by far the commonest Warbler in the extreme north of Europe. Seebohm found it abundant on the fjelds of Norway from the North Cape to the Varanger fjord. Harvie-Brown and Alston found it equally common at Archangel. In their paper in '*The Ibis*' (January 1873) *Phylloscopus eversmanni* only was mentioned; but a re-examination of the skins proves that *Phylloscopus trochilus* is the commoner bird. In the valley of the Petchora we found it common, both in the forests of Ust Zylma and the willow-swamps on the islands of the delta and the tundra. As we proceeded far north it became somewhat rarer; but we found it among the dwarf willows at Dvoinik, the most northerly point on the tundra which we visited. We never before so thoroughly realized its right to the name of Willow-Warbler. We first heard the familiar note of this bird on the 20th of May, but did not succeed in obtaining a specimen until the 23rd, by which time it had become common. At one time we were under the impression that there must be two species of these birds, one of them a smaller, more buff-breasted, and much more silent bird; and we consequently brought home more than forty skins for examination. We are now convinced that the difference in size and habits is merely the difference of sex." Throughout the whole of Central Russia and Poland it is generally distributed, and numerous in suitable localities; and the same may be said respecting its presence in Germany, Denmark, Holland, Belgium, France, and Portugal, where it is a summer resident, arriving in April and leaving in September or early in October. In Spain it is a resident and breeds right down to Gibraltar, where Colonel Irby saw young birds, able to fly, on the 8th May; and he remarks that, although universally distributed in winter, the Willow-Wren is most numerous on passage in March and October.

In Savoy and Italy the Willow-Wren is a summer visitant, arriving in April and leaving in September; and in Sicily it is said to be resident (?). It is, however, one of the least common of the Warblers in Sardinia; and Salvadori remarks that there is not a single specimen in the Museum at Cagliari. According to Mr. C. Bygrave Wharton it was fairly numerous in Corsica after the beginning of April; but he never noticed any during the winter, though he was constantly on the look-out for them; and in Malta, Mr. C. A. Wright says (*Ibis*, 1864, p. 69), the present species is "a bird of passage in March, April, September, and October. It does not

appear to be very common; but in the above seasons I have obtained several specimens—in the latter chiefly the young of the year.”

Throughout the whole of Southern Germany and South Russia the Willow-Wren is generally distributed in the summer, and is said to winter in some localities; and according to Dr. Krüper it winters numerously in the plains of Greece and Asia Minor, arriving late in September or early in October, and leaving again for the north in March. Erhard says that it breeds in the Cyclades; but this statement is called in question by Dr. Krüper. Lord Lilford remarks that he met with it occasionally during the winter, in gardens, in the vicinity of Corfu. Mr. C. Danford observed the Willow-Wren in Asia Minor, and says that it was common at Anascha, where it arrived about the middle of March; and in Palestine, according to Canon Tristram, it positively swarms in every part of the country, and especially in the Jordan valley. Mr. C. W. Wyatt found it on the peninsula of Sinai, but never saw it at a greater altitude than Wády Feirán; and in North-east Africa, Captain Shelley writes, it arrives with the Chiffchaff in September, and leaves in March. During its stay it is very abundant both in Egypt and Nubia, especially so in the Delta, where great numbers may be seen flitting about among the prickly herbage by the sides of the embankments. Von Heuglin says that it passes south to Abyssinia, Kordofan, and the White Nile. He met with it late in August and early in September at Chartum and Berber. In North-west Africa the Willow-Wren is very generally distributed. Mr. J. H. Gurney, jun. (*Ibis*, 1871, p. 84), found it “abundant nearly everywhere in Algeria. Towards the end of March,” he says, “the multitudes which winter in the Tell migrate northwards, and give place to others. Though I frequently thought I heard the Chiffchaff, the birds on being shot nearly always proved to be Willow-Wrens.” Mr. Salvin saw it in March in Tunis; and Favier states that it is the commonest of the Willow-Warblers near Tangier, crossing the Straits in April, returning in November. To this Colonel Irby adds that it certainly nests near Tangier, although he never found a nest.

It ranges south in Africa to Natal and Cape-town. It has been obtained on the Gold Coast. Mr. C. J. Andersson observed it in the neighbourhood of the Okavanga river, in Damara Land; and Wahlberg procured it in Caffraria. Mr. Gurney has recorded it from Natal; and Mr. Ayres states (*Ibis*, 1878, p. 287) that he obtained it in the Transvaal in December and March, and at Potchefstroom in November; and there is a specimen in the British Museum from Cape-town.

The Willow-Wren does not penetrate far into Asia. Dr. Severtzoff makes no record of it from Turkestan; but Mr. Blanford, who obtained it in Persia, writes (*E. Persia*, ii. p. 180) as follows:—“The Willow-Wren must be scarce in Persia; for this was the only specimen obtained. Probably a few winter in the southern part of the country, but breed beyond our limits to the north. *Phylloscopus trochilus* is recorded by Ménériés from the Caucasus and Lenkorán, and by De Filippi from the Lár valley, near Tehrán; but I am not aware that it has been found further to the east. The occurrence of this bird in India was asserted by Gould, apparently upon insufficient authority; and, although included by Jerdon in his ‘Birds of India,’ it is placed amongst the doubtful species in his appendix, and its existence in the country has never, so far as I know, been confirmed by any Indian ornithologist.” In the north of Asia the present species ranges much further east than in the south; for Mr. Seeböhm met with it on the

Yenesay' (or Jenesei) river, and writes (Ibis, 1879, p. 9):—"It was with very great pleasure that I heard the familiar song of this European bird on the 4th of June on the Arctic circle, in the valley of the Yen-e-say', so much further east than it has hitherto been recorded. I afterwards found it common extending as far northwards as lat. 70°. As this bird has never been found in India, it would seem probable that the Yen-e-say' Willow-Warblers winter in Persia, where Blanford records them."

Essentially a bird of the woodlands, the Willow-Wren is to be found almost wherever there is plenty of tree-growth, or even amongst bushes, although it prefers groves where conifers and non-evergreen trees are intermingled, well-wooded gardens, orchards, &c., and it is less seldom seen in the dense forest amongst very lofty trees. It is a cheerful, lively bird, always in motion, fluttering and hopping about amongst the foliage in search of insects, which it also captures on the wing; and it is by no means a shy bird, allowing any one who approaches it cautiously to come quite near without evincing any alarm. Its call-note is a soft, low whistle like the syllables *weed, weed*; and in the spring the male utters a gentle chirping sound like the faint cry of a mouse, which appears to be its pairing-note. Its song, though not very varied, is simple and sweet; and when warbling, the bird swells out its throat and even vibrates its body in the efforts used in bringing forth its song. It feeds almost exclusively on different sorts of small insects, especially aphides, and flies of various kinds; and, unless it be a few berries which it is driven to devour in the late autumn when insects are scarce, it never feeds on fruit of any kind.

The nest of the Willow-Wren is almost invariably placed on the ground, often in a depression in the soil, against a bank, or amongst long grass, and is constructed of dried grass, moss, or fern, worked together with spiders' webs, and lined with hair, wool, and feathers, the last being always used. It is semidomed, rather roughly made outside, and large for the size of the bird, but neatly finished towards the interior.

The eggs, from five to seven in number, are deposited late in April; and usually a second brood is raised in the same season. They are white, more or less spotted, dotted, and blotched with pale red; and occasionally, though but rarely, pure white eggs are found. In size they average about $\frac{2.4}{4.0}$ by $\frac{1.8}{4.0}$ inch.

When collecting on the Petchora river, in North Russia, Mr. Seebohm shot a Willow-Wren which he then believed to be specifically separable from *Phylloscopus trochilus*, and which he subsequently described (*l. c.*) under the name of *Phylloscopus gaetkei*; but he now informs me that it is questionable if it is really deserving of specific rank, and I have therefore deemed it best to reunite it with the present species. Referring to this form or variety, Messrs. Seebohm and Harvie-Brown write (Ibis, 1876, p. 216):—"On the 12th June, as we were slowly creeping down the great river, we stopped to cook under the lee of a steep bank of the Petchora, just before we entered the delta. The bank was wooded to the water's edge; and Seebohm spent some hours exploring the dwarf forest. Willow-Wrens were common; and his attention was arrested by one which was most vociferously uttering a note unlike any that he had ever heard from a Willow-Warbler. The note reminded him somewhat of the spitting of a cat, a hissing sound, which he attempted on the spot to express in words: he shot the bird, and tied to its leg a label marked *Tuz-zuk Warbler*, to remind him of the note. The bird proved to be a female. The respective lengths of the wing and tail agree with female *P. trochilus*; but the

wing-formula is different. Out of at least a hundred skins of *P. trochilus* which Seebohm has examined, he has always found the second primary intermediate in length between the fifth and sixth; in the bird in question the second primary is intermediate between the sixth and seventh." Canon Tristram (*l. c.*) was the first to describe this form as distinct, having obtained it from the coast of the Mediterranean; and one was shot by Mr. Gaetke in Heligoland.

In concluding the present article, I may mention that, although (as above stated) many observers say that the Willow-Wren winters in Southern Europe and North Africa, I have failed to obtain a single specimen killed north of the Atlas range in the winter season.

The specimens figured are adult British birds in early summer and late autumn dress.

In the preparation of the above article I have, besides the large series in the collection of Mr. Seebohm, examined the following specimens:—

E Mus. H. E. Dresser.

a, b, ♂. Hampstead, April 20th, 1870. *c, d, e*. Hampstead, May 7th and 8th, 1870 (*Davy*). *f, ♂*. Purley, near Reading, May 4th, 1870 (*R. B. Sharpe*). *g*. Pagham, Sussex, July 1870 (*R. B. S.*). *h, i, ♂, ♂ juv.* Altenkirchen, near Coblenz, April 7th, 1876, and June 3rd, 1877 (*Sachse*). *j, k, l, ♂, m, ♀, n*. Piedmont, September 1869, April 3rd, 1870, April 29th, 1870 (*Salvadori*). *o, ♂, p, ♀*. Christiania, May 18th and June 10th, 1874 (*Collett*). *q, r, ♂*. Skåne, Sweden, May 20th, 1869, and April 29th, 1875. *s, ♂ juv.* Nerike, Sweden, August 30th, 1875 (*Meves*). *t, ♂*. Maslak, Turkey, October 8th, 1871. *u, v, ♂, w, ♀*. Ortakeuy, Turkey, April 20th, 1869, October 22nd, 1870, October 13th, 1871 (*T. Robson*). *x, ♂*. Mezen, N. Russia, June 16th, 1873 (*Piottuch*). *y*. Tangier (*Olcese*).



1. BONELLIS WARBLER,
PHYLLOSCOPUS BONELLI

2. WOOD WREN,
PHYLLOSCOPUS SIBILATRIX

PHYLLOSCOPUS SIBILATRIX.

(WOOD-WREN.)

- Motacilla sibilatrix*, Bechst. Naturforscher, xxvii. p. 47 (1793).
Sylvia sylvicola, Mont. Trans. Lin. Soc. iv. p. 35 (1798).
Asilus sibilatrix, Bechst. Orn. Taschenb. p. 176 (1802).
Sylvia sibilatrix, Bechst. Naturg. Deutschl. iii. p. 561 (1807).
Ficedula sibilatrix (Bechst.), Koch, Baier. Zool. i. p. 159 (1816).
Curruca sibilatrix (Bechst.), Flem. Brit. Anim. p. 70 (1828).
Sibilatrix, Kaup (*Sylvia sibilatrix*, Bechst.), Natürl. Syst. p. 98 (1829).
Phyllopneuste sibilatrix (Bechst.), C. L. Brehm, Vög. Deutschl. p. 425 (1831).
Phyllopneuste megarhynchus, C. L. Brehm, op. cit. p. 425 (1831).
Phyllopneuste sylvicola (Mont.), C. L. Brehm, op. cit. p. 426 (1831).
Sylvicola sibilatrix (Bechst.), Eyton, Cat. Brit. B. p. 14 (1836).
Sylvia sibilans, Blyth, in White's Nat. Hist. Selborne, p. 26, footnote (1858).

Bec-fin siffleur, French; *Folosa*, Portuguese; *Luà verde*, Italian; *Wald-Laubvogel*, German; *Fluiter*, Dutch; *Grøn Sanger*, Danish; *Grön Sångare*, *Skogs-knettern*, Swedish; *Vieheriä kerttu*, Finnish; *Pienka*, Russian.

Figuræ notabiles.

Temminck, Pl. Col. 245. fig. 3; Werner, Atlas, *Insectivores*, pl. 54; Kjærb. Orn. Dan. taf. xxi.; Fritsch, Vög. Eur. taf. 19. fig. 18; Naumann, Vög. Deutschl. taf. 80. fig. 2; Sundevall, Svensk. Fogl. pl. 14. fig. 2; Gould, B. of Eur. pl. 131. fig. 3; id. B. of G. Brit. ii. pl. 67.

Ad. pileo, nuchâ, dorso, uropygio et tectricibus alarum minoribus viridi-olivaceis sulfureo tinctis, pileo et uropygio magis flavescentibus: fronte et striâ superciliari flavis: remigibus et tectricibus alarum majoribus schistaceo-fuscis, pallidiore apicatis et flavo marginatis: rectricibus schistaceo-fuscis, extûs flavo marginatis: loris fusciscentibus: gulâ, gutture, capitis lateribus et hypochondriis sulfureis: corpore subtùs reliquo albo, marginibus alarum flavis: rostro et pedibus brunneis: iride fuscâ.

Adult Male (Piedmont, 28th April). Crown, nape, back, lesser wing-coverts, and rump olive-green, tinged with sulphur-yellow, the crown and rump brightest in colour; forehead and a streak over the eye bright sulphur-yellow; quills and larger wing-coverts slate-brown with lighter tips, and edged with greenish yellow, the inner secondaries with broader and lighter margins; tail slaty brown, the feathers externally edged with yellow; lores dusky; chin, upper throat, sides of the head, and flanks delicate sulphur-yellow; rest of the underparts white; undersurface of the wings and tail grey, edge of the wing yellow; legs brown; bill brown, with lighter edges; iris brown. Total length about 5 inches, culmen 0·5, wing 3·0, tail 2·0, tarsus 0·72; first primary very short and narrow, 1·8 shorter than the second, which is a trifle longer than the fifth, the third being the longest.

Adult Female. Undistinguishable from the male in plumage, but a trifle less in size.

Young. Resembles the adult, but is a trifle duller in colour.

THE Wood-Wren has a more restricted range in Europe than the Chiffchaff and Willow-Wren; for it only extends northward into Southern Scandinavia, being a summer visitant throughout Europe eastward about as far as the Ural, and migrates southward into North Africa, where it winters.

In Great Britain it is tolerably widely distributed; for it breeds, Professor Newton says, "in all the counties of England and Wales; but in the west of Cornwall, according to Mr. Rodd, it has only been seen once." In Dorsetshire it is, Mr. Mansel-Pleydell says, much more local than the Willow-Wren; and it is tolerably common in most of the southern counties. In North Lincolnshire and Holderness it is, Mr. Cordeaux says (B. of Humber Dist. p. 35), a rather rare summer visitant, and of much less frequent occurrence than formerly; but Professor Newton says that in certain parts of Yorkshire and Durham it would seem to be more abundant than elsewhere in the kingdom. In Scotland it is stated to breed regularly in the southern and midland counties, extending, according to Mr. Robert Gray, northward to Loch na Nuagh, in Inverness-shire, and eastward to Fyvie, in Aberdeenshire, where, however, it is said to be very rare. In Ireland it is scarcely known to occur, the only instances of its having been met with being those recorded by Mr. Harting, who (Handb. Brit. B. p. 17) writes as follows:—"Sir Victor Brooke informs me that he shot a Wood-Wren in his park, in the co. Fermanagh, in June 1870; and Mr. Blake-Knox, of Dalkey, has a specimen in his collection which was killed by a boy with a catapult at Glen Druid, co. Dublin.

In Scandinavia it does not range far north. Mr. Robert Collett informs me that it has not been proved satisfactorily to inhabit Norway. It is certainly stated to have been observed in the beech-woods at Laurvig, Christianiafjord, and may possibly be found there; but, as Mr. Collett remarks, no specimen has ever yet been killed within the limits of Norway and preserved so as to verify the above statement. The late Professor Sundevall says that he does not believe that it occurs further north in Sweden than Stockholm and Upsala, but up there it is rare. Von Wright says it is scattered sparingly throughout Southern Finland, and is met with as far north as Haminanlaks, near Kuopio, but not every year. Near Helsingfors a few pairs are found every year; Messrs. Harvie-Brown and Alston say that it is not common near Archangel; and Mr. Sabanäeff informs me that it is common in Central Russia, and, according to Kessler, more numerous in the Kieff Government than the Willow-Wren. He met with it throughout the Ural up to Bogosloffsk, and adds that it is more numerous in the Ural than in the non-evergreen woods of the Bashkir country. It appears to be tolerably common in suitable localities in Germany; and Herr E. von Homeyer informs me that it is by means rare in Pomerania, where it arrives early in May, but is not generally met with before the 10th. It frequents conifer-woods, or where conifers are intermixed with a few oaks, and not the true non-evergreen woods.

Kjærboëlling says that it arrives in Denmark early in May and leaves late in August, and during its stay it is found chiefly in the large beech-woods. It appears to have increased in numbers during the last few years; for Mr. Fisher says that subsequent to 1862 he found it much commoner in Vendsyssel than previously, and in June 1864 he found it very common in

the Oxholm wood. In Western Germany, Holland, Belgium, and France it is a tolerably common summer visitant in suitable localities, arriving later than the other allied species, and leaving rather earlier. Professor Barboza du Bocage records it from Portugal; and it is found in Spain; but Colonel Irby says (Orn. Str. Gibr. p. 88) that it is the scarcest of the *Phylloscopi* on the Spanish side of the Straits of Gibraltar. He saw the first on the 22nd of April, but was unable to notice the date of its departure south. He adds that he has killed it in his garden at Gibraltar, and that some remain during the nesting-season in the cork-wood. Herr A. von Homeyer met with it in the Balearic Isles, where, he says, it occurred sparingly during migration. In Savoy and Italy it is a regular spring visitant; and in Sicily it is stated to prefer the plains to the hill country. Mr. A. B. Brooke states (Ibis, 1873, p. 243) that it is "common in Sardinia, arriving in spring, when it frequents the orchards and olive-groves." It is said to be tolerably common in Malta during passage; and Mr. C. Bygrave Wharton informs me that he observed several in Corsica early in April. Lord Lilford speaks of it (Ibis, 1860, p. 231) as being "decidedly far from common in Corfu and Epirus;" and Dr. Krüper says that it is only met with on passage in Greece, and he observed it on the 4th April, 1869, in Thessalonica, and on the 26th April, 1874, in Attica. It is a summer visitant to most parts of Southern Germany. The late Mr. Seidensacher informed me that he occasionally met with it on passage near Cilli, in Styria, but he never found its nest there. Dr. Anton Fritsch speaks of it (J. f. O. 1871, p. 196) as being rarer in Bohemia than *Phylloscopus trochilus*; but it breeds near Prague, in the Zavis valley. Von Homeyer met with it in the beech-forests at Sternberg, near Braunau. It is found in Austria, but I have very meagre data respecting its being abundant or otherwise in that country. Messrs. Danford and Harvie-Brown speak of it as being common in Transylvania among the woods of the plains and low country; and, they add, it was also observed on the Retjezat by HH. Csato and Buda-Adam. Messrs. Elwes and Buckley observed it in Turkey; in Southern Russia it is stated by Von Nordmann to be common; and it nests, he states, in the Crimea, in the countries on the borders of the Black Sea, and in Abasia. Dr. Krüper says that he only observed it in Asia Minor on passage in April, and again in August; and Canon Tristram, who met with it in Palestine, writes (Ibis, 1867, p. 83) as follows:—"It was curious that we never met with a specimen of *P. sibilatrix* in winter; but on the 26th April they suddenly appeared, on which day Mr. Bartlett shot more than a dozen; and until the second week in May they were very common, after which we saw them no more; nor did we ever find a nest. The species seems merely to be of passage on its way to the north. In Algiers I have noticed them in the beginning of April." It visits Africa during the winter season. Captain Shelley says (B. of Egypt, p. 101) that though it is to be met with throughout Egypt and Nubia, and he believes it occasionally remains throughout the year, for he obtained a specimen near Assouan as late as the end of April, it is not plentiful there at any season; but Herr Th. von Heuglin says (Orn. N.O.-Afr. p. 298) that it is not an uncommon winter visitant in North-east Africa, where it is met with along the Nile. Lefebvre obtained it in September at Schirié, in Northern Abyssinia; and Mr. Cavendish Taylor observed it near Damietta in April. In North-west Africa it is also met with in the winter, and possibly remains there to breed; for Mr. O. Salvin states (Ibis, 1859, p. 306) that he shot a single specimen in May near where the Chemora empties itself into Lake Djendeli. Loche speaks of it as not being common in Algeria, where it is only met with in

wooded localities; and M. Favier does not record it as occurring near Tangier; but Messrs. Shelley and Buckley met with it on the Gold-coast.

During several seasons I have spent a portion of the early summer in the districts near the Rhine; I always met with the present species, usually by no means uncommon. Mr. Carl Sachse, of Altenkirchen, with whom I collected, has passed much time studying the habits of the birds which inhabit that portion of Rhenish Prussia; and I am indebted to him for some interesting field-notes on the present species. It arrives, he tells me, later than any of its allies, and leaves earlier. The Chiffchaff arrives first, then the Willow-Wren; and the present species does not put in an appearance before late in April or early in May. In 1875 Mr. Sachse first observed it on the 29th April. There it inhabits the non-evergreen woods, sometimes where conifers are intermixed, but always where the trees are high; and he tells me that he has never known it to frequent conifer growth or the small groves in the open. Usually it is found in the large beech-woods, where the foliage is so closely interwoven that scarce a sun-ray can penetrate through the dense leafy roof, where the ground is but little covered with grass, but with larger weeds &c., where much refuse in the way of old leaves is strewn about, and where the ground is damp, but not wet. Here it frequents the tops of the trees or the scattered lower branches, and may not unfrequently be met with searching after food on the ground. Its song is uttered either whilst the bird is perched on one of the lower branches, or whilst it soars from tree to tree. Its call-note is a low *fruit*; and its song, which is clear and sweet, consists of the syllable *chu* or *chit* uttered four or five times in succession, and usually followed by a shivering note which may be heard at a considerable distance. Its alarm-note does not differ from that of the Willow-Wren. As a rule the Wood-Wren is a shy, sprightly, and active bird, difficult of approach, except during the breeding-season, when anxiety for its nest renders it less careful of its personal security than at other seasons. I am also indebted to Mr. H. Seebohm for the following notes, viz.:—"The Wood-Warbler is not so common as the Willow-Warbler in the neighbourhood of Sheffield, but is much commoner than the Chiffchaff. It reaches our woods and copses about a fortnight later than the two last-named birds, its interesting song being rarely heard until after the middle of April. The song so aptly called by Gilbert White the 'shivering' notes of the Wood-Warbler, when once heard can never be forgotten. It commences for the first note or two somewhat like that of the Willow-Warbler, but rapidly increases in speed, finally running into a trillo. One might attempt to express it on paper thus—*chit, chit, chit, chit, chitr-tr-tr-tr-tr-tre*. The Wood-Warbler has a very loud and plaintive call-note, constantly repeated in early spring, like *dee'-ur, dee'-ur, dee'-ur*. Its alarm-note, generally uttered when you are too near the nest, differs little, if any, from the alarm-notes of the Willow-Wren and Chiffchaff—a low and somewhat plaintive *hoo-it* or *whit*. This bird is not quite so restless as the other two British *Phylloscopi*; nor is it so timid, allowing a nearer approach without taking wing. I have frequently seen these birds catching flies on the wing, like the Spotted Flycatcher; but they do not take such long flights, nor seem in any way compelled, like that bird, to return back to the same twig. The song is often commenced on the wing, a few moments before alighting; and during the final trillo the wings and tail, if not the whole body, of the bird vibrate with the exertion. Both the song and call-note are common to the male and female."

The food of the Wood-Wren consists chiefly, if not entirely, of insects and their larvæ,

which it either catches on the wing or picks off the foliage of the trees it frequents; and it is, comparatively speaking, seldom seen searching for food on the ground. Naumann says that in the autumn, should the weather be bad and insects scarce, it will feed on berries; but I do not recollect to have ever from personal experience found this to be the case.

Its nest is, like those of its allies, domed, placed on the ground, and constructed of dry grass-bents, a little green moss, and lined with a few hairs and finer bents. Naumann, who, as is well known, was an excellent observer, says that it sometimes lines its nest with wool and feathers; but, so far as I can ascertain, this must be very exceptional. Mr. Sachse gives me the following notes respecting the nidification of the present species, viz.:—"The nest of the Wood-Wren is placed in woodlands, in rather more open places than the dense forest, and often near old paths, and never *in* or *above*, but always *on* the ground. The nest is extremely difficult to find; and I have sometimes sought for it for hours in vain, although I knew it must be close to me. I usually find it by seeing the bird fly out; and it then generally feigns to be wounded, to entice one away. The nest is domed, and has stout walls; and when it is placed near the path the opening is always hidden from view. I have generally found it concealed amongst the dry foliage, and sometimes hidden by a tussock of grass. It is neatly lined with fine grass-bents and horsehair; and the contents can only be seen if one bends down close to it on the ground. The number of eggs varies from five to seven, six being the normal number; and I have found fresh eggs from the 25th May to the 6th June. They vary greatly both in form and size: I possess one clutch of seven, which are elongated and as large as those of the common Swallow, and another of five, which are short and round and not larger than those of the Chiffchaff."

Eggs of the Wood-Wren, of which I possess a tolerable series in my collection, are white, minutely spotted and speckled with deep purplish-red spots, sometimes with a brownish tinge; and here and there are a few pale purplish-grey underlying shell-dots: in some the spots are more numerous round the larger end, forming a wreath. In size the eggs average about $\frac{2.6}{4.0}$ by $\frac{1.9}{4.0}$ inch.

The specimen figured (on the same Plate with *Phylloscopus bonelli*) is an adult male from Piedmont, being the bird above described.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a, b, c. Middlesex (*H. E. D.*). *d, ♂.* Purley, near Reading, May 4th, 1870 (*R. B. Sharpe*). *e, ♂, f, ♀.* Sardinia, April 1870. *g, ♂.* Piedmont, April 28th, 1870 (*Count Salvadori*).

E Mus. H. B. Tristram.

a. Castle Eden, Durham (*H. B. T.*).

E Mus. Howard Saunders.

a. Usern, Switzerland. *b, ♂.* Valencia, Spain, April 14th (*H. S.*). *c.* Bastia, Corsica, April 10th, 1875 (*C. B. Wharton*).



JGKeulemans lith

Hanhart imp

BONELLI'S WARBLER..
SYLVIA BONELLII.

PHYLLOSCOPUS BONELLII.

(BONELLI'S WARBLER.)

Sylvia bonelli, Vieill. Nouv. Dict. xxviii. p. 91 (1819).

Sylvia nattereri, Temm. Man. d'Orn. i. p. 227 (1820).

"*Sylvia nattereri*, Temm.," Boie, Isis, 1822, p. 553.

Curruca platystoma, Ehr. Symb. Phys. fol. cc (1829).

Phyllopneuste montana, C. L. Brehm, Vög. Deutschl. p. 429 (1831).

"*Sylvia prasinopyga*, Licht.," Gloger, Handb. Vög. Eur. i. p. 217 (1834).

"*Sylvia albicans*, Baldst.," Gloger, tom. cit. p. 217 (1834).

Phyllopneuste bonellii (Vieill.), Bp. Comp. List, p. 13 (1838).

Ficedula bonelli (Vieill.), Keys. & Blas. Wirbelth. Eur. p. 185 (1840).

Phyllopneuste alpestris, C. L. Brehm, Vogelfang, p. 232 (1855).

Phyllopneuste orientalis, C. L. Brehm, op. cit. p. 232 (1855).

Bec-fin Bonelli, French; *Lui bianco*, Italian; *Bii-fula*, Maltese; *Millil*, Arabic; *Berg-Laubvogel*, German.

Figuræ notabiles.

Temminck, Pl. Col. 124. fig. 3; Werner, Atlas, *Insectivores*, pl. 58; Naumann, Vög. Deutschl. taf. 369. fig. 4; Gould, B. of Eur. pl. 134.

Ad. corpore suprâ fusciscenti-olivaceo vix viridi tincto, uropygio sulfureo lavato: alis et caudâ saturatè schistaceo-fuscis, plumis extûs angustè viridi marginatis: striâ superciliari pallidè flavescenti-cervinâ: corpore subtûs albo, pectore et hypochondriis vix sulfureo tinctis: axillaribus et margine alæ lætè sulfureis.

Adult Female (Piedmont, 20th April). Upper parts much browner than in *Ph. sibilatrix*, being brownish olive with a greenish tinge, the rump washed with sulphur-yellow; wings and tail slaty brown, with very narrow dull greenish margins; streak over the eye light buffy yellow; underparts white, with a light sulphur-yellow tinge on the breast and flanks; axillaries and edge of the wing bright sulphur-yellow. Total length about 4·75 inches, culmen 0·42, wing 2·5, tail 1·82, tarsus 0·72; first primary longer than in the Wood-Wren, being 1·1 shorter than the second, which is 0·2 less than the third, and a trifle longer than the sixth, the third and fourth nearly equal, the fifth a trifle shorter.

Adult Male. Similar in plumage to the female, but a trifle larger, measuring—culmen 0·42, wing 2·7, tail 2·1, tarsus 0·72.

Obs. In the series of specimens I have of this bird I find a good deal of difference in coloration, some having the upper parts much browner and the underparts much whiter than in others; and most of those from Greece and North Africa have the underparts white without any trace of yellow, except on the flanks, and the eye-streak buff. This being the form usually figured, I have deemed it advisable to

figure the yellowest specimen I possess, for comparison with the Wood-Wren, as it is figured on the same Plate with that species. Irrespective of the difference in colour, the present species has always a shorter and broader wing and a larger first primary than the Wood-Wren.

THIS Warbler does not range further north in Europe than into Northern France, but is generally distributed throughout Southern Europe during the summer season, and passes across the Mediterranean to spend the winter in Africa, where it is met with as far south as Nubia and Senegal. Messrs. Degland and Gerbe say that it breeds near Metz, where M. Meslier de Rocan has killed several, that M. Jules de Lamotte has met with it near Abbeville, and that M. Millet states it to be very common in the woods and forests of the arrondissements of Baugé, Saumur, and Beaupréau, where it arrives about the middle of April and leaves at the end of August; and they add that they themselves have on several occasions met with it in the woods near Paris, especially in those of Meudon and Clamart. In the south of France it is said to be common. Professor Barboza du Bocage records it from Portugal; and Dr. E. Rey says (*J. f. O.* 1872, p. 149) that in Algarve he found it nowhere rare. In Spain it is a tolerably common summer resident. Colonel Irby says (*Orn. Str. Gibr.* p. 89) that it is numerous near Gibraltar, nesting in the fern in the cork-wood, and he noticed the first arrival on the 1st of April. It is there only a summer visitant, and never occurs in the winter months.

It is, as above stated, common in the south of France, and passes through Provence in considerable numbers on its way to the elevated portions of Switzerland and Savoy, where it breeds, nesting as high up as the Haute Engadine. Naumann (*Vög. Deutschl.* xiii. p. 421) says that "it occurs in Switzerland—in the cantons of Graubünden (especially in the Engadine), St. Gallen, Appenzell, less frequently in the canton of Zürich,—and also in Southern Germany, namely in the Tyrol, Salzburg, and a portion of Austria, in Suabia and Bavaria, where it is met with annually." He further remarks that it is gradually extending its range; for whereas it used to be almost unknown in Würtemberg, it is now quite common in some seasons. In Italy it is common, breeding in the hills; and the same may be said as regards Sicily; but it is by no means common in Sardinia. According to Mr. C. A. Wright it is met with in Malta during the two seasons of passage. Dr. Krüper says that it is the only summer resident which breeds in the more elevated portions of the mountains of Greece, and is one of the first to arrive; for it appears before the end of March in the olive-groves in the plains: in Attica he met with the first in 1867 on the 4th of April, in 1873 on the 28th of March, and in 1874 on the 12th of April. It remains several weeks in the plains, and then retires to the mountains, the young birds appearing in the plains in July. In Southern and South-eastern Germany it also occurs. The late Mr. E. Seiden-sacher informed me that he only once met with it, near Cilli, in Styria, in April 1858; but the Ritter von Tschusi-Schmidhofen writes (*J. f. O.* 1872, p. 134) that of late years it has become quite common near Maria-hof, in Styria, whence he has received many eggs through the Pfarrer Hanf. He also observed it near Hallein on the 15th August, on passage; but he never found it breeding in Austria. Messrs. Danford and Harvie-Brown state (*Ibis*, 1875, p. 308) that there is a specimen in the Klausenburg Museum, which was shot in the Museum garden in May 1873, and it has also been killed on the Strell, in March 1845, by Herr Stetter. It occurs in Turkey, and, according to Professor von Nordmann, has twice been killed on the south coast of the Crimea.

In Asia Minor it appears to be tolerably common. Dr. Krüper says that he observed the first near Smyrna in 1863 on the 19th March, in 1864 on the same date, in 1871 on the 23rd March, and in 1872 on the 16th March. Canon Tristram met with it in Palestine, where, he says (*Ibis*, 1867, p. 83), it “arrived about the 1st April, and rapidly dispersed to its various haunts, remaining to breed, which no other member of the group did;” and he adds that it seems to affect the wooded hills, such as Carmel, Tabor, and the lower slopes of Hermon, in preference to the low grounds, where he did not meet with it. Mr. C. W. Wyatt observed it on the peninsula of Sinai, where, as a spring migrant, he first noticed it on the 10th March. Captain Shelley says that it is very abundant, especially in Upper Egypt, during the spring and autumn; and Mr. J. H. Gurney, jun., informs me that in Egypt it is a spring migrant, and not met with in the winter. He first obtained it at the most southern point he reached, Philæ, on the 24th March; and he remarks that examples he obtained in Egypt are rather lighter on the back than others in his collection from Spain. Von Heuglin says (*Orn. N.O.-Afr.* p. 300) that it appears in Egypt in August and September, and returns to Europe in April. He met with it in Southern Nubia. In North-west Africa it is also a winter visitant, and appears to be common in Algeria. Canon Tristram writes (*Ibis*, 1859, p. 418) that it is “abundant in the oases” in winter, but retiring northwards at the end of February. The Chiffchaff especially assembles in thousands in the palm-groves of El 'Aghouat. The Arab name for all three species is ‘Millil.’” Favier says that it is found during passage near Tangier in company with Chiffchaffs and Willow-Wrens, but is not so numerous as these. It returns in September again from the north. It appears also to inhabit Senegal, as a specimen from there is stated to be in the Berlin Museum.

In habits the present species is said to have much in common with the other species of *Phylloscopus*, but affects elevated places, and is generally found in the woods on the hill-sides, usually frequenting the southern slopes. Its food it obtains in the trees; and, like its allies, it is strictly insectivorous, feeding on small insects and their larvæ, which it picks off the leaves or searches for amongst the bushes; but it seldom appears to obtain its food on the ground. Its flight closely resembles that of its near allies; but it differs considerably both in its call-note and in its song. I have met with this Warbler on but few occasions, and am unable to give particulars of its song and call-note from memory, and therefore translate the following notes published by Naumann (*Naturg. Vög. Deutschl.* xiii. p. 423), viz.:—“In habits it resembles the other small Warblers, and is as quick in its movements, and as untiring as well as agile in creeping through the foliage. It creeps through in a rather bent position, the feathers drawn in, and is exceedingly quick and nimble. During damp weather, or when it has difficulty in finding the small insects on which it feeds, it puffs its feathers out and is quieter, but is all the more active and cheery during fine and warm weather. Only the male, when singing or calling, is to be seen on the summit of a tree or on the outside branches, and only for a short time; the female is more secretive, and in the vicinity of the nest or young even shyer than many other birds. Should any one approach this bird it gets suspicious, and exceedingly shy if it finds itself followed, and herein is different from many of its allies. It seldom descends to the ground; and when there it hops heavily about, and never remains there long, usually only to collect materials for its nest, &c.; but the female undertakes this labour more than the male. Its flight resembles that of its allies, is light and swift—when protracted, in a succession of bow-shaped lines; and

when only from tree to tree, it is fluttering; and it soars and sails for short distances." Landbeck (Vög. Würt. p. 46) says that its call-note is a melancholy *hoied* or *hoieb*, and its song *iiiiii* and *wuit, wuit, wuit, wuit*.

Nidification commences early in May; and the full complement of eggs is generally deposited in about the second half of the month. The nest is placed on the ground, usually in some small depression in the soil or amongst stones, but concealed by the herbage. It is constructed of dried grass-bents intermixed with a little moss and lined with finer bents, neither hair nor feathers being employed in the lining. Like those of its allies, its nest is domed; and the opening is usually carefully concealed by some of the grass growing round the nest. The eggs, four or five in number, resemble those of the Wood-Wren (*Ph. sibilatrix*), but are smaller, averaging about $\frac{2.5}{4.0}$ by $\frac{1.9}{4.0}$ inch in size; and the spots are more profuse and rather browner in tinge of colour.

The specimen figured (on the same Plate with *Phylloscopus sibilatrix*) is the adult bird above described.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a, ♂ *ad.* Piedmont, April 3rd, 1870. *b*, ♂. Piedmont, April 28th, 1870. *c*, ♀. Piedmont, April 20th, 1870 (*Count Salvadori*). *d*, ♀. Smyrna, April 3rd, 1871 (*Krüper*). *e*. Egypt (*Rogers*). *f*, ♂. Egypt, March 25th, 1870 (*Captain Shelley*). *g*. Algiers (*Fairmaire*). *h*. Tangier (*Olcese*).

E Mus. H. B. Tristram.

a, ♀. Algiers, April 21st, 1856 (*H. B. T.*). *b*, ♂. Scheik Amma, April 26th, 1864 (*H. B. T.*). *c*, ♀, *d*, ♂. Mount Tabor, April 5th, 1864 (*H. B. T.*). *e*, ♂. Mount Hermon, May 13th, 1864 (*H. B. T.*).

E Mus. Howard Saunders.

a, *b*. Usern, Switzerland. *c*, ♂. Macedonia, April 8th, 1869 (*Krüper*).

PHYLLOSCOPUS PLUMBEITARSUS.

(GREY-LEGGED WILLOW-WARBLER.)

Sylvia (Phyllopneuste) coronata, Middendorff, Sib. Reise, p. 182 (1851, nec Temm.).

Phylloscopus plumbeitarsus, Swinhoe, Ibis, 1861, p. 330.

Regulus proregulus, Sabanäeff, Bull. Soc. Imp. Mosc. 1871, p. 248 (nec Pall.).

Phyllopneuste middendorffii, Meves, Öfv. K. Vet. Ak. Förh. 1871, p. 758.

Phyllopneuste plumbeitarsus (Swinh.), Homeyer, Journ. für Orn. 1872, p. 206.

Phyllopneuste (Phyllobasileus) coronatus, Homeyer, J. f. Orn. 1872, p. 207 (nec Temm.).

Phyllopneuste excoronatus, Homeyer, J. f. Orn. 1872, p. 207.

Hypolais graminis, Severtzoff, Turk. Jevotnie, p. 125 (1873).

Phylloscopus viridanus, Dresser, Ibis, 1876, p. 81 (nec Blyth).

Figura unica.

Meves, Öfv. K. Vet. Ak. Förh. 1871, taf. xv. fig. 1.

Ad. capite et corpore suprâ griseo-fuscis flavo-viridi lavatis: alis et caudâ griseo-fuscis, plumis extûs flavo-viridi marginatis: striâ superciliari usque ad nucham productâ flavo-albidâ: alis fasciis duabus flavido-albis notatis: corpore subtûs albo, pectore et hypochondriis flavo et pallidè cinereo lavatis: alis subtûs, axillaribus et tibiis pallidè flavis: rostro fusco, mandibulâ pallidè fusco-carneâ: iride fuscâ: pedibus plumbeis.

Adult Male (Bystraja, 15th July). Crown, nape, and upper parts generally greyish brown tinged with yellowish green; wings and tail greyish brown, the feathers externally margined with yellowish green; the wings crossed by two greenish white bars, the first distinct, the second very indistinct; sides of the head to below the eye like the crown; a broad yellowish white superciliary line passes over the eye to the nape; underparts dull white; the cheeks, breast, and flanks washed with grey; axillaries, under wing-coverts, and thighs pale yellowish, third and fourth primaries longest, fifth rather shorter, sixth, seventh, and eighth graduatedly shorter, second primary intermediate between the seventh and eighth; bastard primary rather long, the exposed part measuring 0·63; upper mandible brownish, under mandible pale fleshy brown; iris dark brown; legs plumbeous. Total length about 4·5 inches, culmen 0·45, wing, 2·45, tail 2·05, tarsus 0·8.

Young (Tjubuk, 21st July). Resembles the adult, but is rather more greenish in colour.

THIS species, like many of the Willow-Warblers, has been not a little confused with allied species; and therefore its range is yet but unsatisfactorily defined. It certainly, however, ranges slightly into the limits of the Western Palæarctic Region in Russia, and breeds there. Mr. Meves, who was the first to record its occurrence in Europe, writes (J. f. O. 1875, p. 429) as follows:—"When referring to this species in 1871 I did not expect to find it on my second journey in 1872 breeding within European limits. I first saw and heard it near the town of Perm, on the further shore of the Kama, where it was uttering its powerful, clear, somewhat

twittering song from the tops of the dense-growing fir-trees. It was, however, so shy that I could not then succeed in shooting it; but on the 21st July I shot a pair near Tjubuk, which were feeding their half-fledged young without showing any sign of fear; and subsequently I shot several young birds which had completed their moult, and were singing like the one I heard at Perm, but not so loudly." From the Ural the present species ranges right across the continent of Asia. In the collections sent from the country skirting Lake Baikal by Dr. Dybowski there have been a tolerable number of this Warbler, thus showing that it is not uncommon there; and, according to Mr. Meves, it was obtained by Von Middendorff as far east as Ochotsk. Von Middendorff himself says that he shot it on the 8th (20th) June near Udskoj Ostrog, and Dr. Stubendorff sent it to him from the Birjussa, in the Sajan Mountains. Dr. Radde shot two examples, on the 17th and 19th August 1856, near the village of Kulussutajeffsk, where this species was found, in company with *Phylloscopus superciliosus*, frequenting the hedges. On the spring passage he did not observe it. According to Colonel Prjevalsky, who met with it in Mongolia, it is very abundant in the Kansu Mountains, where it generally confines itself to the wooded cliffs. It appeared there in the middle of May; but the snow which fell after its arrival destroyed a great many, and he found some dead and others so weak that they caught them with their hands. Père Armand David says (Ois. de la Chine, p. 271) that large numbers pass Peking at the same time as *Phylloscopus borealis*; and Swinhoe met with it on the west coast of Hainan in March. It is rather difficult to state where this bird winters, as the information respecting its winter quarters are very meagre; but Lord Tweeddale possesses examples procured by Captain Wardlaw Ramsay in January at Kyouk-kyre, in British Burmah, and by Captain Beavan at Moulmein in September. It is worthy of note that this species does not appear to have been obtained in India, or at least recorded from there, it being replaced by *Phylloscopus viridanus*, which is rather greener in colour, has the head rather darker than the back, the third, fourth, and fifth primaries longest, the second equal to the seventh, and the upper wing-bar wanting. This latter species may possibly be found within the limits of Europe, as a young bird obtained by Mr. Meves at Tjubuk, on the south-east side of the Ural, appears to belong to this species.

Phylloscopus nitidus, Blyth (J. As. Soc. Beng. xii. p. 965, 1843), is another Asiatic species which has once occurred in Europe, a single example having been shot by Mr. Gätke's son Ludwig in Heligoland; but I do not think it advisable to include it on the strength of this single occurrence. This species approaches very closely to *Phylloscopus viridanus*, differing only in having the upper parts greener, the head the same colour as the back, and the underparts pale lemon-yellow.

As this species differs so little in coloration from its allies, I have not deemed it necessary to figure it.

The specimen described is one from near Lake Baikal, in my own collection.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a, ♂ *ad.* Bystraja, near Lake Baikal, July 15th, 1870 (*Dybowski*). *b*, *pull.* Tjubuk, S.E. Ural, July 21st, 1872 (*Meves*).

E Mus. H. Seebohm.

a, ♂, June 9th, *b*, ♂, June 15th, *c*, ♂, June 19th, *d*, ♀, July 7th, 1870, Lake Baikal (*Dybowski*).



EVERSMANN'S WARBLER
PHYLLOSCOPUS BOREALIS

PHYLLOSCOPUS BOREALIS.

(EVERSMANN'S WARBLER.)

Sylvia (Phyllopneuste) evermanni, Midd. Sib. Reise, p. 178 (1851, nec Bp.).

Phyllopneuste borealis, Blas. Naumannia, 1858, p. 313.

Phylloscopus sylvicultrix, Swinhoe, Ibis, 1860, p. 53.

Sylvia flavescens, G. R. Gray, P. Z. S. 1860, p. 349.

Phylloscopus hylebata, Swinh. J. As. Soc. Beng. xxiv. p. 265 (1861).

Phyllopneuste borealis, Blas. Ibis, 1862, p. 68.

Phyllopneuste kennicottii, Baird, Trans. Chic. Ac. Sc. i. p. 279 (1869).

Phyllopneuste evermanni, Homeyer, Journ. für Orn. 1872, p. 204 (nec Bp.).

Phyllopseustes borealis (Blas.), Meves, J. f. Orn. 1875, p. 429.

Figuræ notabiles.

Midd. Sib. Reise, taf. xvi. figs. 1, 2, & 3 A; Baird, Trans. Chic. Ac. Sc. i. pl. xxx. fig. 2; Meves, Öfv. K. Vet. Ak. Förh. 1871, taf. xv. fig. 2.

Ad. pileo et corpore suprâ griseo-fuscis pallidè viridi lavatis, uropygio flavo-viridi: caudâ et alis griseo-fuscis, plumis extûs viridi-flavido marginatis: striâ superciliari usque ad nucham productâ flavidâ: alis fasciis duabus transfasciatis: corpore subtûs griseo-albo, pectore et hypochondriis griseo et flavido lavatis: subalaribus, axillaribus et tibiis pallidè flavis: rostro fusco, mandibulâ pallidiore: pedibus pallidè fuscis: iride fuscâ.

Adult Male (Lake Baikal, 5th June). Upper parts greyish brown washed with pale green, the rump yellowish green; wings and tail greyish brown, the feathers externally margined with yellowish green; a broad yellowish superciliary line passes to the nape; underparts greyish white, the breast and flanks washed with yellowish and grey; axillaries, under wing-coverts, and thighs pale yellow; wings crossed by two bars, the lower one very distinct, the upper one much less so; bill dark brown, the under mandible pale; legs brown; iris dark brown. Total length about 4.75 inches, culmen 0.5, wing 2.7, tail 2.0, tarsus 0.8; third and fourth primaries longest, the fifth much shorter, and the sixth considerably shorter than the fifth, second intermediate between the fifth and sixth; bastard primary very small, the exposed part measuring about 0.32.

Adult in autumn. Resembles the adult in spring, but has the underparts pale yellow, the breast and flanks washed with grey.

THE range of this species appears certainly to be the most extensive of any of the *Phylloscopi*; for it has been met with from the north of Norway right across the continent of Asia to Alaska, and in winter it ranges far south amongst the islands of the Indian archipelago.

It was not known to occur west of Russia until 1876, when Mr. Collett met with it on the Porsanger fiord; and in an excellent article on this species by that gentleman, he writes

(P. Z. S. 1877, p. 43) as follows:—"In the summer of 1876, when visiting for the third time during the last six years the province of Finmark, mainly with the object of studying fishes and marine invertebrata, I resolved on devoting a few days to excursions along the forest-clad slopes of the rivers that flow into the great Porsanger, Laxe, Tana, and Varanger fjords. Among the more southern of the vertebrate species occurring here in considerable numbers, I hoped to light upon forms not hitherto observed in those regions (the most northerly of our country), and further elucidate the question as to what influence their occurrence in different degrees of latitude exerts on their outward structure and general habits. These parts of Finmark having never before been visited by any naturalist, it struck me as not impossible that I might fall in with some of the eastern species that are found inhabiting the shores of the White Sea, but which hitherto have not been observed in Norway.

"My surmise proved correct; for sooner than I had anticipated, on one of the first of my excursions on the Porsanger fjord, in the beginning of July, I met with *Phylloscopus borealis* in several localities on the banks of the rivers emptying into that fjord.

"On the 4th of July, when traversing in company with my friend Mr. Landmark, Inspector of Salmon Fisheries, at that time engaged in investigating the rivers of that region, one of the extensive and comparatively luxuriant birch-forests on the slopes of one of those rivers, my attention was attracted by a song wholly unknown to me, and which I at once set down as that of one of the many species of eastern *Sylviidae*.

"I had secured two individuals, both male birds; and having at hand Meves's paper about his journey in Northern Russia, I immediately recognized them as belonging to the species described by Blasius, in 'Naumannia' for 1858, as *Phylloscopus borealis*; and we saw and heard several others at the same place.

"A few days later, when strolling along the banks of one of the other rivers, I again observed this species in several places, in a tract about ten English miles in extent, and again shot two, also males, but was not able on my comparatively rapid progress through this part of the country to obtain a female. Hereabouts we heard, I should think, ten individuals, all of them singing, and consequently all males. On the 21st of July I first succeeded in shooting a female, in the vicinity of the Pasvig Elv, South Varanger, about 200 English miles east of the locality where I first met with the bird.

"In the last-mentioned locality I observed several pairs; but the season being so far advanced, many of the males had probably ceased singing; and the species doubtless occurred in more places than those where I observed it. My time on each occasion having been limited, I did not succeed in obtaining either the nests or eggs; the latter perhaps had been hatched previous to my arrival in Finmark, or, may be, were in process of incubation.

"*Phylloscopus borealis* consequently occurs throughout a considerable portion of Finmark in most localities suitable to its habits; probably therefore not further north than 70° 20'. Its distribution in Norway extends from the rivers on the confines of Russia to the birch-woods in the vicinity of the Porsanger fjord, or directly east of the North Cape; and the distance from that fjord to Alten on the west coast being not more than twenty English miles, it will very probably be found to inhabit the luxuriant birch-forests clothing the banks of the Alten Elv.

"*Phylloscopus borealis* affects exclusively the loftiest and most luxuriant birch-forests in the

vicinity of rivers or lakes; and as it never occurred when the growth was sparse or stunted, I soon learned to tell from the appearance of the locality whether it was inhabited by the little songster. The soil in these birch-woods was always tolerably fertile, and the vegetation luxuriant, reaching, as a rule, up to the knees; the most conspicuous plants were *Geranium sylvaticum*, *Chamænerion angustifolium*, *Melampyrum*, *Myrtillus nigra*, various species of Gramineæ, &c.

"In such localities several pairs were often found breeding, not far apart; and sometimes I could hear two, and even more males singing simultaneously. As a rule, however, they were somewhat scattered.

"It invariably shunned localities where the soil was wet and spongy, selecting, in the forests it affects, comparatively dry and elevated spots, which it inhabits in company with *Phylloscopus trochilus*, *Cyanecula suecica*, *Turdus iliacus*, *Fringilla montifringilla*, and *Linota linaria*, likewise *Parus cinctus* and *P. borealis*.

"The song of the male birds rendered them more easy of detection than the females, which were probably just then sitting, or feeding the nestlings. Notwithstanding the season was far advanced, they sang frequently and for a considerable time together, not only in the middle of the day, but late in the evening and early in the morning; nay, on one occasion, I heard one singing in the middle of a rainy night (this individual was one of those preserved).

"The song in summer is consequently not confined to any particular time of day. It consists of a monosyllabic note, *zee, zee, zee, zee*, rapidly reiterated a dozen times in succession, the commencing strain bearing some resemblance to that of *Sylvia curruca* or *Emberiza citrinella*; then succeed one or two disconnected hissing sounds, *tseers, tseers*, a trifle lower in tone than the main song, but still audible at a considerably greater distance than the corresponding tones of *Phylloscopus collybita* (after its bisyllabic song), which can only be distinguished in its immediate proximity.

"The song is repeated several times, after which come intervals of greater or less duration when it is silent. The hissing sound was also uttered when the bird was frightened, and was the only note I heard from the female. The call-note (*hweet*) of *Ph. collybita* and *Ph. trochilus* was never uttered by *Ph. borealis*. Once only did I hear another and far lower song, which I at first mistook for that of *Parus cinctus*, and which bore a striking resemblance to the usual note of that species, the closing syllable being somewhat drawn out.

"One I heard singing in this manner was shot and preserved; it was imitating, in all probability, the song of *Parus cinctus*, a habit characteristic of another of the singing birds of Finmark, *Acrocephalus schænobænus*. As late as the 22nd of July the males were in full song in the vicinity of the Pasvig Elv, South Varanger.

"Though not, strictly speaking, shy, these birds exhibit, as a rule, greater wariness than *Ph. trochilus*, and, if scared, would not always allow you to get within shot. They were remarkably brisk in their movements, scudding to and fro through the leafy tree-tops in pursuit of insects, and were rarely seen on the lower branches or in close proximity to the ground. They generally sing while fluttering from branch to branch, precisely as the other species of *Phylloscopus* do.

"The localities they inhabit being exclusively such as swarm with mosquitos, and the summer of 1876 having been unusually productive of those insects, my investigation of their

general habits was rendered extremely difficult. It was absolutely impossible to keep still a moment, the veil not only affording insufficient protection against their continuous attacks, but being in other respects obstructive to minute observation.

"The food, too, of *Ph. borealis*, at this season of the year, would seem to be wholly taken from these countless myriads; and the crops in all the species examined were crammed with these insects. There are at least half a dozen species of these mosquitos, all more or less numerous, though some outnumber the others in particular localities.

"On one occasion (July 22) I may have been close to a nest, on the Pasvig Elv, near Lake Tschoalme-javre, South Varanger. Both the parent birds exhibited unmistakable signs of alarm; but here, too, the mosquitos prevented me from finding the nest. A female shot in another locality on the same river had large incubation-spots.

"I prepared, in all, five specimens, four of which were males. Both sexes were, in regard to colour of plumage, precisely alike. A very slight difference was seen in some of the males, the dorsal feathers being in some darker than in others; and the eye-stripe in such specimens was a trifle wider."

Mr. Collett gives a careful table of measurements of the specimens obtained by him, and adds the following remarks respecting the same, viz.:—"The female would thus appear to be somewhat smaller than the males, a deduction in accordance with Mr. Meves's measurements of a number of specimens obtained at Kopashevskaja, south of Archangel, on the 8th and 9th of August 1869 (Öfv. Vet. Akad. Förh. 1871, p. 758), whereas, on the other hand, there was a singular and almost invariable discrepancy between the Russian and Finmark specimens, the latter appearing to have been all somewhat larger than those from Archangel. Middendorff has before observed that the back of specimens taken in the middle of the summer, when the plumage is somewhat worn and faded, has lost a little of its vivid green colour and has acquired a greyer tint; this was likewise the case with all the Finmark specimens, which, besides, scarcely retained a trace of the whitish-yellow spots at the extremities of the wing-coverts that in autumn and early spring give to the wings a yellowish band. The first primary in one specimen was a trifle shorter than the coverts, in the others of the same length or very little (1 millim.) longer." It was found commonly in North Russia, near Archangel, by Messrs. Alston and Harvie-Brown, and by Mr. Meves near the village of Kopatshevskaja, where it doubtless breeds, as he shot quite young birds in company with their parents. Piottuch sent specimens from Mesen; and Messrs. Seebohm and Harvie-Brown write (Ibis, 1876, p. 216) as follows:—"In Seebohm's collection there are three skins of this species from North-east Russia. One was shot by Harvie-Brown and Alston near Archangel; a second was procured by Piottuch at Mesen; and the third was shot by Seebohm in the same locality as the variety of *Phylloscopus trochilus* just mentioned, and whilst he was searching for a second specimen. He remarked in his diary at the time that the note was more rapid than that of *Phylloscopus trochilus*, and more resembling that of the Whitethroat. In fact the song is more that of a *Hypolais*, a genus which the bird also resembles in the large size and width of the bill. This species is a very distinct one. In size and colour it resembles *Phylloscopus trochilus*, but has a distinct pale bar across the wings, caused by the wing-coverts being pale at the tips. The wing-formula is the same, except that the bastard primary is very much less, in fact as small as that of *Phylloscopus sibilatrix*. It further resembles

Phylloscopus sibilatrix in having a comparatively shorter tail. We only met with this one specimen of *Phylloscopus borealis*, and are consequently unable to give any further information respecting it." I may also remark that it has certainly occurred once in Heligoland; for Mr. Gätke obtained it there in October 1854; and he believes that he saw another on the 1st June 1859.

In Asia it is very widely distributed. Mr. Seebohm found it breeding on the Yennesei, but did not meet with it further north than 69° N. lat.,—though Von Middendorff obtained it on the Boganida in 70° N. lat. late in June; and he also says that he shot a male on the western slope of the Stanowoi Mountains, on the Ujan river, on the 23rd May, but did not meet with it on the eastern slope. Dr. Radde shot a male on the 17th May at the Tarei-nor, and met with it in June near Irkutsk, more especially in the Kaja valley. It appears to be very common in Dauria, where it breeds; and, according to Colonel Prjevalsky, it is "tolerably common in the mountains of S.E. Mongolia, especially at Muni-ul. In Northern Ala-Shan, about the beginning of May," he writes, "we saw several on the steppes, on migration, and here also this lively bird has the same habits as in other localities. It is scarce in the Ussuri country; and I cannot say if it breeds there or not." In China it is evidently a very common species, as large numbers have been sent from there. Père David says that it is often seen near Pekin in May and June and, especially, in August and September; and Mr. Swinhoe, who found it at Amoy, South-west Formosa, Taiwanfoo, and Chefoo, says that it is common in South China on passage, but he did not find it breeding there. It also occurs in Japan. Von Schrenck obtained it from the Kurile Islands; and, according to Meves, Von Middendorff found it at Ochotsk.

Southward it ranges in winter down to the Malay archipelago. Mr. A. O. Hume states (Stray Feathers, i. p. 495) that it is found everywhere in the cold season from Ceylon to Peshawur in the west, and Debroogurh in the east, and he received it from Tenasserim and the Andamans. I have examined specimens from the latter locality collected by Captain Wardlaw Ramsay, and also from Maingay, Malacca; and it has been obtained in Flores, Ternate, Timor, Gilolo, Labuan, and Borneo.

It has also once been obtained on the American continent, at St. Michael's, Alaska, by Mr. Pease. Mr. G. R. Gray (Hand-l. of B. i. p. 215) gives "Egypt" amongst the localities where this species occurs; but this must be an error, as, so far as I can ascertain, it has never been obtained in Africa.

Until recently but little was known of the habits of this Warbler; but, thanks to the successful researches of Mr. Meves, Mr. Seebohm, and Mr. Collett, there are now most excellent notes both on its general habits and nidification. I transcribe above Mr. Collett's notes *in extenso*; and there are some most interesting notes by Dr. Dybowski, communicated by Mr. Taczanowski (J. f. O. 1872, p. 358), which I translate as follows:—"This bird arrives (in Dauria) late in May or early in June, at which time the entire district resounds with its song, as it does in the autumn with the chirping of the locusts. Its note consists of the syllables *tsi, tsi, tsi, tsi* uttered in quick succession; and if several are singing at once, it sounds like an uninterrupted humming all through the forest. Until the middle of June they frequent the birch-woods in the valleys, where they may be seen flitting about the tops of the trees feeding on insects. About the middle of June they divide in pairs, leave the valleys, and resort to higher altitudes to breed. They nest in the

dark cedar-forests, especially those where *Pinus cembra* and *Pinus pichta* are interspersed; and they are even found in the underwoods. They seem to prefer dark humid places overgrown with *Rhododendron chrysanthum* and upland willows. The nest of this species is placed on the ground in moss interwoven with grass, bilberry, and rhododendron bushes, and is dome-shaped, the bird working the moss or grass around into a sort of arch or dome, under which it makes a bed for its eggs of dry cedar-spines. Its nest altogether resembles that of the other *Phylloscopi*. Late in July we found a nest containing six half-fledged young. The young leave the nest when their tails are half-grown, and remain together for some time."

Mr. Meves, who met with this bird in North Russia, says that the old birds were feeding on the large green larvæ of a *Tenthredo* or *Lophyrus*, which, holding in their bill, they struck against a bough until fit to swallow. They were very lively and active; and he compares the note to that of *Muscicapa grisola* or *Sylvia atricapilla*.

Mr. Seeböhm, who found this bird breeding on the Yennesei, gives me the following notes, viz.:—"A fortnight after the arrival of *Phylloscopus trochilus*, *P. tristis*, and *P. superciliosus*, I had given up *P. borealis* in despair, when suddenly it arrived in great numbers and became the commonest of the four species. The song is almost exactly like the trill of the Redpole, but not quite so rapid, and a little more melodious. Its call-note is generally a single monotonous *dzit*, but sometimes made into a double note by dwelling on the first part *d-z, zit*. It is less restless than the other Willow-Warblers, by no means shy, and is easy to shoot. When I left the Arctic circle it had probably not commenced to breed; but on the 6th of July I had the good fortune to shoot a bird from its nest at Egaska in lat. 67°. The eggs are larger than those of our Willow-Warbler, pure white, and profusely spotted all over with very small and very pale pink spots. They were five in number. The nest was built on the ground in a wood thinly scattered with trees, and was placed in a recess on the side of a tussock or little mound of grass and other plants. It was semidomed, the outside being composed of moss, and the inside of fine dry grass. There was neither feather nor hair used in the construction. I did not see this bird further north than lat. 69°."

The specimen figured is an adult male in full summer dress from Lake Baikal, in my own collection.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a, ♂. Laxelo, Porsanger, Finmark, July 7th, 1876 (*R. Collett*). *b*, ♂. June 4th; *c*, *d*, ♂. June 5th, Lake Baikal (*Dybowski*). *e*, *f*, *g*, *h*. Amoy, China, April. *i*, *k*. Amoy, May (*R. Swinhoe*). *l*. Yedo, Japan (*C. M'Vean*).

Subfamily ACROCEPHALINÆ.

Genus HYPOLAIS.

- Motacilla* apud Linnæus, Syst. Nat. i. p. 330 (1766).
Sylvia apud Bechstein, Orn. Taschenb. p. 173 (1802).
Muscipeta apud Koch, Baier. Zool. i. p. 170 (1816).
Hypolais apud C. L. Brehm, Isis, 1828, p. 1283.
Curruca apud Ehrenberg, Symb. Phys. fol. 66 (1829).
Hypolais, Kaup, Natürl. Syst. p. 96 (1829).
Salicaria apud Strickland, in Gould's B. of Eur. part xx. (1837).
Phyllopneuste apud Bonaparte, Comp. List, p. 13 (1838).
Calamoherpe apud Bonaparte, ut suprâ (1838).
Ficedula apud Keyserling & Blasius, Wirbelth. Eur. p. 56 (1840).
Iduna apud Keyserling & Blasius, ut suprâ (1840).
Calamodyta apud G. R. Gray, Gen. of B. i. p. 172 (1849).
Chloropeta apud Bonaparte, Cat. Parzud. p. 6 (1856).
Jerdonia apud Hume, Ibis, 1870, p. 182.

THE genus *Hypolais* includes a few Old-World Warblers which can easily be grouped together in the same genus, though on the one side they almost merge in the true *Phylloscopi* and on the other in the *Acrocephali*. One characteristic of this genus is the fact that all the species included in it build neat cup-shaped nests, and deposit eggs which differ widely from those of any other Warbler, being pale salmon-coloured or pinky grey spotted with purplish black.

The range of the present genus extends over the Palæarctic Region and the northern portions of the Ethiopian and Oriental Regions. These birds are extremely fine songsters; and several species are said to mimic the songs of other birds with great fidelity. They are chiefly, if not exclusively, insectivorous.

Hypolais icterina, which is generally accepted as being the type of this genus, has a stout bill, very wide at the base, somewhat compressed towards the tip; wings somewhat pointed, the third quill longest, the first very short; tarsi rather short, the feet small; tail moderately long; tarsus covered anteriorly with four plates and three inferior scutellæ.



1. OLIVACEOUS WARBLER.
 HYPOLAIS PALLIDA
 2. MELODIOUS WARBLER.
 HYPOLAIS POLYGLOTTA

HYPOLAIS POLYGLOTTA.

(MELODIOUS WARBLER.)

Sylvia polyglotta, Vieill. Nouv. Dict. xi. p. 200 (1817, syn. excl.).*Hypolais salicaria*, Bp. Comp. List, p. 13 (1838, partim).*Ficedula hypolais*, Keys. & Blas. Wirbelth. Eur. p. 56 (1840, partim).*Hypolais polyglotta*, Gerbe, Rev. Zool. vii. p. 440 (1844).*Ficedula polyglotta*, Schlegel, Vog. Nederl. p. 136 (1854-58).*Folosa*, Portuguese; *Carisalero*, Spanish.

Ad. capite summo, nuchâ et corpore suprâ cinereo-olivaceis, pileo et fronte saturationibus et vix brunneo adumbratis: alis et caudâ saturatè et sordidè brunneis, remigibus et tectricibus alarum superioribus vix pallidiore marginatis: striâ superciliari flavâ, regione paroticâ brunnescente olivaceo lavatâ: corpore subtùs dilutè flavo: rostro saturatè brunneo, mandibulâ flavicante: iride fuscâ: pedibus sordidè brunneis.

Adult Female (Malaga, 18th June). Upper parts dull greyish olive, rather darker and brownish on the crown and forehead; wings and tail dull dark brown, the quills and wings-coverts having very narrow paler outer margins; lores and a line over the eye sulphur-yellow; auriculars washed with olive-brown; entire underparts pale lemon-yellow; flanks and sides of the neck washed with pale brownish or greyish olive; upper mandible brown, lower mandible dull yellowish; iris brown; legs dull greyish brown. Total length about $4\frac{1}{2}$ inches, culmen 0.6, width of mandible at base 0.22, wing 2.5, tail 2.05, tarsus 0.85, first primary small, but 0.18 longer than the primary coverts, second rather shorter than the sixth, third and fourth equal, being also the longest.

Adult Male. Undistinguishable from the female.

Obs. Mr. E. von Homeyer appears to consider that *Hypolais preglüi*, Frauenf., may be the present species, or at least something very close to it; but most ornithologists agree in referring it to *H. pallida*. Herr von Homeyer states (J. f. O. 1859, p. 204) that it is coloured like *Hypolais icterina*, but has the form of *H. pallida*. I have not had an opportunity of examining the type, and am therefore unable to state with certainty to which it should be referred. I have also been unable to refer to any figure that I know for certain to be of *Hypolais polyglotta*, as it has been so greatly confused with *H. icterina*, which is the species that has generally been figured.

THE present species, the western representative of the Icterine Warbler, with which it has continually been confused, appears to have a very restricted range, being found only in Western Europe and North-western Africa, migrating southward in the winter, at which season of the year it has been met with.

Baron De Selys-Longchamps informs me that it is very rare in Belgium, where he has only met with it on one or two occasions, its ally (*Hypolais icterina*) being, on the other hand,

extremely common there. In France, according to Degland and Gerbe, it is found in tolerable abundance near Paris and Dieppe, and is common in the southern portion of that country. It appears now and then in Northern France during the seasons of migration, but seems to be there generally replaced by the Icterine Warbler. Professor Barboza du Bocage includes it in his list of the birds of Portugal, without, however, giving any further details. In Spain it is extremely common, and breeds there. Mr. Howard Saunders speaks of it as being extremely numerous during the summer in Southern Spain; and Col. Irby says that it arrives in Spain about the 21st April, and nests in the cork-wood and vicinity of Gibraltar in numbers. How far its range extends to the eastward is difficult to determine, as it has been very generally confused with *Hypolais icterina*. Bailly says that it arrives in Savoy early in May and leaves early in the autumn; but I am uncertain as to whether he may not refer to *H. icterina* and not the present species. I have examined a specimen from Genoa, in the collection of Mr. Howard Saunders; and Salvadori states that it frequents similar localities in Italy to those inhabited by *H. icterina*. Doderlein records two instances of its capture in Sicily—one by himself near Mazzara, and the other near Girgenti; and further search would probably result in the discovery of more. The Ritter von Tschusi Schmidhofen informs me that there is a specimen in the Vienna Museum which was found dead in a plantation near Olmütz on the 3rd of July, 1865, which appears to be the most eastern locality whence it has been recorded, and, so far as I can ascertain, is the only instance of its having been met with in Germany.

It is found in Northern Africa only on the western side of the continent, where it is common, and breeds in Algeria. Canon Tristram met with it in the Sahara; and Mr. O. Salvin found it numerous about the Chemora, where it was breeding in the tamarisk-trees. I have a specimen from Tangier, where it is said to be common. In the winter it is found far south in Africa; and there is a specimen in the British Museum, from Gambia, undoubtedly referable to the present species.

In its habits the present species appears to differ but slightly from the Icterine Warbler, to which species it is very closely allied. It frequents wooded localities near water, and wet, marshy, bush-covered districts, as well as gardens and well-cultivated dry places. Its song is sweet and varied, resembling that of the Icterine Warbler. Judging from the dates when the eggs I possess were taken, it appears to breed rather late; for several clutches of eggs in my collection, obtained near Malaga, in Spain, were all taken in the latter half of June. The nests, which appear always to be placed in the fork of a branch of some tree or bush, are slightly smaller than that of *H. icterina*, cup-shaped, and very neatly and compactly built of fine grass-stems, some in the outside being rather coarser than the rest, and interwoven with thistle-down, the interior being composed of the finest materials without any extra lining.

The eggs, four in number, are smaller than those of *H. icterina*, pale fleshy pink in colour, spotted, and to some slight extent streaked with purplish black. In size they average from $\frac{2.7}{40}$ by $\frac{1}{2}$ inch to $\frac{2.8}{40}$ by $\frac{2.2}{40}$ inch.

The specimen figured and described is in my own collection, and was obtained in Spain.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a, ♀. Malaga, June 18th, 1871 (*H. Saunders*). *b*. Gibraltar, May (*Col. Irby*). *c, d*. Tangier (*Olcese*).

E Mus. H. L. Irby.

a. Gibraltar, May 1872. *b*. Casa Vieja, May 2nd, 1874 (*H. L. I.*).

E Mus. Howard Saunders.

a. Malaga, June 18th. *b, ♂*. Malaga, July 25th (shot from nest) (*H. S.*). *c, ♀*. Genoa, October 1872 (*H. S.*).

E Mus. Brit. Reg.

a. Europe. *b*. Gambia.



ICTERINE WARBLER
HYPOLAIS ICTERINA

HYPOLAIS ICTERINA.

(ICTERINE WARBLER.)

- Motacilla hypolais*, Linn. Syst. Nat. i. p. 330 (1766).
Fauvette des roseaux, Montb. Ois. vi. p. 51; Pl. Enl. 581. fig. 2 (1783).
Motacilla hypolais (L.), Bechst. Naturg. Deutschl. iv. p. 660 (1795).
Sylvia hypolais (L.), Bechst. Orn. Taschenb. p. 173 (1802).
Muscipeta hypolais (L.), Koch, Baier. Zool. i. p. 170 (1816).
Sylvia icterina, Vieill. Nouv. Dict. xi. p. 194 (1817).
Hypolais alticeps, C. L. Brehm, Isis, 1828, p. 1283.
Hypolais media, C. L. Brehm, ut suprâ.
Hypolais planiceps, C. L. Brehm, ut suprâ.
Hypolais (*Motacilla hypolais*, L.), Kaup, Entw.-Geschichte, p. 96 (1829).
Phyllopneuste icterina (Vieill.), Bp. Comp. List, p. 13 (1838).
Hypolais salicaria, Bp. ut suprâ (1838, partim).
Ficedula hypolais (L.), Keys. & Blas. Wirbelth. Eur. p. 56 (1840).
Ficedula icterina (Müll.), Keys. & Blas. tom. cit. p. 56 (1840, partim).
Hypolais polyglotta, De Selys, Faune Belge, p. 99 (1842).
Ficedula hypolais, Schlegel, Rev. Crit. p. 26 (1844, partim).
Hypolais icterina (Vieill.), Gerbe, Rev. Zool. 1844, p. 440.
Sylvia obscura, Smith, Zool. S. Afr. pl. 112. fig. 1 (1849).
Phyllopneuste hypolais (L.), Gurney, B. of Damaraland, p. 100 (1872).

Icterine Warbler, *Melodious Willow-Warbler*, English; *Bec-fin à poitrine jaune*, French; *gelber Spottvogel*, *Garten-Laubvogel*, German; *Spotvogel*, *Geelborstje*, Dutch; *Guulbuget*, *Sanger*, *Bastard-Nattergal*, Danish; *Gulbröstad Sångare*, *Bastard-Näktergal*, Swedish; *Bastard-Nattergal*, Norwegian; *Penochka-sadovaya*, Russian.

Figuræ notabiles.

D'Aubenton, Pl. Enl. 581. fig. 2; Werner, Atlas, *Insectivores*, pl. 53; Kjærbo. Orn. Dan. taf. xxi.; Fritsch, Vög. Eur. taf. 19. fig. 16; Naumann, Vög. Deutschl. taf. 80. fig. 1; Gould, B. of Eur. pl. 133; Des Murs, Icon. Orn. pl. 57; Smith, Ill. Zool. S. Afr. pl. 112. fig. 1; Sundev. Sv. Fogl. pl. 14. fig. 1.

♂ *ad.* capite suprâ, nuchâ, dorso tectricibusque alarum minoribus cinereo-olivaceis, striâ pallidè flavâ a naribus ad oculum: regione paroticâ lutescenti-olivaceâ: corpore subtùs dilutè flavo: crisso et subtectricibus alarum pallidioribus: remigibus saturatè fuscis, primariis vix, secundariis latiùs lutescente griseo marginatis: rectricibus saturatè fuscis, vix pallidiorè marginatis.

♀ *mari similis sed pallidior.*

Adult Male (Malta, May). Upper parts, including the scapulars and upper wing-coverts, greyish olive, underparts lemon-yellow; lores and a streak over the eye yellow, auriculars dull brownish yellow; quills dull brown, with light external margins, the inner secondaries having this edging of a pale yellowish tinge; tail dull brown, most of the feathers with indistinct paler edges; bill brown above, the lower mandible yellowish; iris brown; legs dull slate-colour. Total length about 5 inches, culmen 0.68, width of mandible at base 0.3, wing 3.1, tail 2.25, tarsus 0.8, first primary small, scarcely so long as the primary coverts, 1.8 shorter than the second, which is nearly equal to the fourth, third and fourth nearly equal, the former being the longest.

Female. Resembles the male, but is a trifle paler in colour.

Nestling (Belgium). Like the adult in coloration, except that the upper parts are darker and browner, and the wing-feathers broadly margined with dull pale olive-brown or dull buff.

THE range of the present species is most difficult to define; and until specimens have been examined from all localities where it and *Hypolais polyglotta* occur, it will be impossible to state exactly where each species is found, as up to quite lately they have been much confounded. Judging from what materials I have at hand, I fully agree with Professor Newton in considering that it is a more eastern as well as a more northern species than the Melodious Warbler; for all the specimens I have seen from Eastern Europe belong to this species and not to *H. polyglotta*. It is merely a summer visitant to Europe, and probably winters far south in Africa, as it is recorded from Northern Africa as a migrant, and has been obtained as far south as Caffraria.

It has occurred in Great Britain on two occasions, and was recorded under the name of the Melodious Willow-Warbler, the specimens obtained being then supposed to be the *Sylvia polyglotta* of Vieillot (*S. hippolais*, Bechst., nec Linn.). However, thanks to the liberality of the owners of the two British-killed specimens, they were both intrusted to my care for examination, and I was enabled to prove, when I exhibited them to the British Association at Brighton, August 20th, 1872, that they belong to the present species, and are not *H. polyglotta*. The first of these specimens was, as recorded by Dr. Plomley, killed at Eythorne, near Dover, June 15th, 1848, and passed into the collection of Dr. Scott, of Chudleigh. The second was shot on June 8th, 1856, by Mr. J. G. Rathborne at Dunsinea, on the banks of the river Tolka, in the county of Dublin, and was by him presented to the Royal Dublin Society's Museum. This last occurrence was recorded by Dr. Carte, in January 1857 (Journ. R. Dubl. Soc. i. p. 440), and the first by Dr. Plomley, in the 'Zoologist,' 1848, pp. 2228, 2346.

In Scandinavia the present species is not uncommon in the southern districts, and is found in Norway to $67\frac{1}{2}^{\circ}$ N. lat., and in Sweden to about 63° N. lat.

Mr. Collett says that it is generally distributed throughout the lowlands of Norway up to Helsingland; and Mr. Godman obtained it at Bodö, in $67\frac{1}{2}^{\circ}$ N. lat. It is most common along the coast, and breeds numerously near the Christiania fjord, in Nedernæs, and near the Trondhjems fjord. In the interior it is rarer, but has been found breeding at Lillehammer and in Land. Nilsson says (Sk. Faun. p. 326) that it only occurs in Southern Sweden, but is said to be common near Gothenburg, and a few breed in Wermland. In Skåne it breeds regularly. Professor Sundevall (Sv. Fogl. p. 68) records it as occurring in Jemtland and Ångermanland, in about 63° N. lat.; and in Finland, according to Von Wright (Finl. Fogl. p. 135), it is found here and

there up to the Kuopio district, though everywhere found singly; it is most numerous at Haminanlaks. Mr. Sabanäeff informs me that it occurs in the Governments of Vologda and Archangel; and Meves found it in several localities in North Russia by no means uncommon, and observed it on the Ladoga, at Wuitegra, on Lake Onega, &c. Mr. Sabanäeff further informs me that he observed it in the Ural, in the Ekaterinburg district, as far as 57° N. lat., and that it is more frequently met with in the Ural than in the birch-woods of the south-eastern slopes. Mr. Jacovleff does not refer to it in his list of the birds found in the province of Astrachan. Borggreve speaks of it, under the name of *Ficedula hypolais*, as being exceedingly common in North Germany; and Dr. E. Rey informs me that it arrives in Saxony about the beginning of May, and is tolerably common during the summer. In Denmark it is likewise common in the summer; but, according to Kjærbölling, it does not arrive till late in May and leaves again in August. In Belgium, according to Baron De Selys Longchamps (*Revue Zool.* 1847, p. 5) it is very common on the plains, especially in the provinces of Liége and Brabant, and is one of the latest species to arrive, as it does not usually appear until about May 11th. In 1841 it was first seen on May 4th, in 1842 on the 12th, 1843 on the 17th, 1844 on the 15th, 1845 on the 14th, and 1846 on the 11th.

In Holland it is common throughout the country, arriving in May, remaining to breed, and leaving again in September; and it is likewise common in the northern provinces of France, where, according to Degland and Gerbe, it leaves in August; but in Provence, according to Jaubert and Barthélemy-Lapommeraye, it is of very rare occurrence, only having been observed two or three times, its place being supplied by *Hypolais polyglotta*. It is recorded from Portugal by Professor Barboza du Bocage; but I think it probable that he may have mistaken *H. polyglotta* for it; and in Spain it appears to be replaced by that species, though Mr. Howard Saunders thinks that it is found near Malaga. However, all the specimens I have seen from Spain are referable to *H. polyglotta*, which is very common there during the breeding-season.

Passing eastward, again, I find it, according to Bailly, of very rare occurrence in Savoy in spring and autumn; but it becomes more abundant on passage towards the middle of August. In Italy it appears to be abundant throughout the greater portion of the country from May to September; and the same may be said of Sicily. According to Mr. C. A. Wright (*Ibis*, 1864, p. 71), "it is a regular visitor to Malta in April, May, September, and October. Although never very numerous, it is far from being rare. I have frequently met with it on the sheltered sides of hills, among fig-trees, and obtained a good many specimens at different times. Owing to its restless disposition, which induces it to be constantly on the move, it is not easy to shoot; yet it is not shy. . . . Dr. Adams tells me he has seen this bird in May hunting for flies on the wing like the true Flycatchers (*Muscicapidæ*), and that its call-note is a harsh creak, but that he never met with *H. polyglotta*." In Greece, according to Von der Mühle, it is rare, and only seldom observed during the autumn migration. This gentleman refers to it (*Monogr. Eur. Sylv.* p. 98) under the name of *Sylvia hypolais*; but his description clearly shows that the present species is the one found in Greece. Mr. Seebohm informs me that he shot a specimen between Athens and Marathon on April 28th, 1873; but Dr. Krüper informed him that it is only seen in Greece and Asia Minor for about a fortnight in spring and again in autumn. Strickland obtained it in Zante; and Von Heuglin (*Orn. N.O.-Afr.* p. 296) observed it singly in Egypt in the spring.

According to Professor Sundevall, a specimen shot in March, and sent home from Caffraria by Wahlberg, belongs to the present species, as it is undistinguishable from Swedish examples. I have also examined a specimen obtained by Andersson at Objimbinque, in South Africa, and now in the British Museum, which is certainly the present species. On referring to the plate and description of *Sylvia obscura*, I am certainly of opinion that the present species is meant; but the length of the wing (2·3 inches) does not agree with any specimen of *H. icterina*, and I can only suppose that it is a misprint and should be 3·2 inches, which is about the proper size. Besides, the fact of Wahlberg and Andersson having obtained the present species, and not *H. polyglotta*, makes my supposition the more reasonable. It is, however, well possible that both species may occur there, as I have seen a specimen of *H. polyglotta* from the Gambia and now in the British Museum. The eastern limits of the range of the present species can scarcely be defined, as information is wanting respecting it from South-eastern Europe. It does not appear to pass east of the Ural range in Russia; and Von Nordmann speaks of it as rare near Odessa and in Southern Russia generally. Messrs. Dickson and Ross (P. Z. S. 1839, p. 120) refer to a bird under the name of *Sylvia hippolais* as "seen near Erzerum from the commencement of April to the beginning of October," and as being migratory, which I believe to be the present species; but Mr. Blanford did not meet with it in Persia.

In its habits the Icterine Warbler somewhat resembles the aquatic Warblers, though almost equally allied to the Willow-Wrens, and is in fact in this as in many other respects a link between these two groups. Baron De Selys-Longchamps says that it affects thickets in damp situations, especially willow-growths, but appears to inhabit equally dry situations, gardens, and orchards; it is, however, a bird of the lowlands, shunning the more elevated or mountainous districts. In Norway, Mr. Collett informs me, where about forty years ago it was almost unknown, it now increases in numbers from year to year, and is found in almost every large garden near Christiania; it frequents non-evergreen woods, especially such as are, to a small extent, intermixed with conifer trees scattered singly here and there. Throughout the whole of Europe it is merely a summer visitant, arriving late and leaving early, doubtless wintering very far south in Africa.

Every author who has written on the habits of this species refers to its rich and varied song. It is years since I have had an opportunity of hearing it; but I have even yet a tolerably clear recollection of its extreme variety and compass, to some extent reminding one of the song of the Nightingale. It is an excellent mimic, and will reproduce at length the song of many species inhabiting the same districts. Baron De Selys compares its song to that of the Marsh-Warbler, but says it is more lively and gay. Mr. Collett, writing on its song, says that "it is the very best of our songsters, although we have several whose notes are by no means feeble. Its song not a little resembles that of the Nightingale; and like that bird it has a habit of repeating several notes, which is either not at all or else only to a very small extent the case with the other songsters; but one finds it again in the ditty of the Song-Thrush. Its talent for mimicry is developed to an astonishing degree; for it reproduces with striking fidelity not only the call- and alarm-notes of the Swallow, Titmouse, and Lark, but will imitate from beginning to end the notes of the Wryneck, Stone-Chat, Starling, and several other species, besides repeating portions of the songs of the Redstart, Whitethroat, and other Warblers. It is exceedingly shy, and it is most difficult to come within range of it; besides which it hides, when singing, in the dense

foliage; but near the nest it may always be approached with ease, and hops uneasily about amongst the branches only a few yards distant, uttering a cry like *pi-ti-u-y*." Baron De Selys remarks that it mocks the Greenfinch, and mimics the call-notes of the Swallow, Golden Oriole, and Wood-Chat. It is, he says, quarrelsome, courageous, active, and, excepting when singing, always on the move. It feeds entirely on insects, which it seizes on the wing like a Flycatcher.

Its nest is one of the most artistic and neatest structures of any constructed by the Warblers. It is usually placed on a low tree, or, according to Baron De Selys, on a lilac bush or a low fruit-tree, and is cup-shaped, the external portion being composed of straws and fine rootlets bound together with a little moss and wool, and covered with small paper-like shreds of birch bark, which are worked in the surface with spiders' webs and the spittle of the bird, forming a very close and firm structure; the lining consists of fine plant-stems and a few horse-hairs. I have before me a nest obtained near Christiania, in Norway, in July by Mr. Collett, from which I have taken the above description. Its eggs, usually four or five in number, closely resemble those of *H. polyglotta* in colour and markings, but are, as a rule, larger in size; they are dull rose-pink in colour, sometimes with a faint brownish tinge, and are speckled with purplish brown, almost black, dots and spots. In size they measure from $\frac{2.9}{4.0}$ by $\frac{2.3}{4.0}$ to $\frac{3.1}{4.0}$ by $\frac{2.2}{4.0}$ inch. In Northern Germany and Norway the eggs are deposited about the middle of June, or from then to the third week in that month.

The specimens figured are an adult male from Malta, and a young bird just ready to leave the nest from the environs of Brussels, both being in my collection.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a. Tjubuk, E. Ural, August 16th, 1872 (*Meves*). *b, c.* Malta, May 1863 (*C. A. Wright*). *d, e, ♂, f, g, ♀.* Malta, September 1862 (*C. A. W.*). *h, pullus.* Near Brussels, Belgium (*A. Dubois*).

E Mus. Brit. Reg.

a. Europe (*Verreaux*). *b, c.* Antwerp (*Sharpe*). *d.* Objimbique, S. Africa (*Andersson*).

E Mus. Howard Saunders.

a, ♂. Nassau. *b, ♂.* Westphalia (*Schlüter*). *c.* Palermo.



1. WESTERN OLIVACEOUS WARBLER.

HYPOLAIS OPACA

2. OLIVE-TREE WARBLER.

HYPOLAIS OLIVETORUM

HYPOLAIS OLIVETORUM.

(OLIVE-TREE WARBLER.)

Salicaria olivetorum, Strickland, in Gould's B. of Eur. part xx. (1837).*Calamoherpe olivetorum* (Str.), Bp. Comp. List, p. 13 (1838).*Sylvia olivetorum* (Str.), Temm. Man. d'Orn. iv. p. 611 (1840).*Sylvia olivetorum* (Str.), Drummond, Ann. & Mag. Nat. Hist. xii. p. 415 (1843).*Hypolais olivetorum* (Str.), L. Gerbe, Rev. Zool. vii. p. 440 (1844).*Ficedula olivetorum* (Str.), Schlegel, Obs. sur le S. G. des Pouillots, p. 27 (1848).*Calamodyta olivetorum* (Str.), G. R. Gray, Gen. of B. i. p. 172 (1849).*Chloropeta olivetorum* (Str.), G. R. Gray, Hand-list of B. i. p. 214. no. 3027 (1869).*Figuræ notabiles.*

Gould, B. of Eur. pl. 107; Des Murs, Icon. Orn. pl. 58. fig. 2.

♀ *ad.* suprâ sordidè brunnescenti-grisea, vix olivaceo adumbrata: alis et caudâ saturatoribus: remigibus in pogonio externo vix albido marginatis et apicatis, secundariis intimis eodem colore conspicuè marginatis: rectricibus externis vix albo marginatis, et rectricibus omnibus versus apicem pallidioribus: ad basin rostri supra oculum striâ albidâ: marginibus palpebrarum albis: corpore subtùs albo, pectore et crisso flavicante cervino lavatis: hypôchondriis grisescente cervino adumbratis: rostro cornescenti-brunneo, mandibulâ flavicante versus apicem brunneâ: pedibus sordidè plumbescenti-griseis: iride fuscâ.

Juv. adultæ similis sed ubique sordidior et pallidior, remigibus et tectricibus alarum in pogonio externo rufescente conspicuè marginatis.

Adult Female (Smyrna, 19th May). Upper parts dull brownish grey, with a faint olive tinge; wings and tail rather darker and browner than the back; primaries and outer secondaries narrowly margined and tipped with dirty white, inner secondaries similarly but more broadly margined on the outer web; outer tail-feather with a narrow white margin to both webs, and all the tail-feathers rather lighter at the tips; from the base of the bill, extending over and behind the eye, an indistinct whitish line; margins of the eyelids white; underparts white, on the breast and vent washed with very pale yellowish buff; flanks washed with brownish buff; beak horn-brown, the under mandible yellowish, except at the tip; legs dull lead-grey; iris dark brown. Total length about 6 inches, culmen 0.73, wing 3.3, tail 2.8, tarsus 0.95; first primary very small, measuring from the carpal joint to its tip 1.2; second and fourth quills about equal, the fourth being, if any thing, a shade the longer; third quill longest, measuring 0.1 longer than the second.

Adult Male in autumn (Smyrna, 1st August). Similar to the female above described, but rather duller in colour, the feathers on the upper parts being rather worn and abraded.

Young (Attica, 22nd June). Resembles the adult, but is duller and paler in colour, and the quills and wing-coverts have the outer web margined with dull reddish brown. According to Count von der Mühle (Monogr. Eur. Sylv. p. 90) the young bird in its first plumage closely resembles the young of *Sylvia*

nisoria and *orphea*, but can be distinguished from either of these by other characters besides the form of the beak. From *S. nisoria* it differs in having the upper parts tinged with olive-green, whereas in *S. nisoria* they are light grey, becoming slate-grey on the back; in *S. nisoria* second and third quills are about equal, whereas in *H. olivetorum* the third is considerably longer than the second. From *Sylvia orphea* it differs in having the flanks and under tail-coverts tinged with grey, whereas in *S. orphea* these parts are washed with rusty yellow.

THIS Warbler, though first named by Strickland in 1837, was, it appears, really discovered in 1835 by Colonel H. M. Drummond-Hay. This gentleman, in reply to a letter from me, asking for any particulars he could furnish as to its discovery, writes as follows:—"You are quite right in supposing that I was the original discoverer of this species, having first noticed it in the island of Corfu in the spring and summer of 1835; and I think it was that autumn or the spring of the following year that poor Strickland paid a visit to the islands, when I showed him the bird in question, as also various other species I had collected, among which was also a bird with which I was then unacquainted, but which I now fully believe to have been Lindermayer's *Salicaria elatica*. This bird and the Olive-tree Warbler were most conspicuous from the beauty and power of their song, especially the latter, which, from the top spray of an old olive-tree, would make the woods resound with his melody; and from the resemblance some of his notes bore to the first bar of an old Scottish tune ('Tulloch-Gorum'), he passed among us (I mean some of my old brother officers and sportsmen) by the sobriquet of the 'Tulloch-Gorum bird,' and the other one the 'Lesser Tulloch-Gorum bird.' In those days, when ornithology was not so well known as it now is, and facilities for communicating discoveries were not so readily obtained, I lost the opportunity of making known many discoveries of our rarer European birds. Strickland found my bird in Zante in the spring of 1836, and described it under the name of *olivetorum*, he most probably not having recollected seeing it in my collection; and under these circumstances, and never having described it myself, I must waive any claim of prior discovery." In the *Annals & Mag. Nat. Hist. (l. c.)* Colonel Drummond-Hay (then Mr. Drummond) states that it is "common in Corfu, arriving about the 15th May, and moves to the south in August." Mr. Strickland met with it in the island of Zante; and I have lately examined the type obtained by him there, and now in his magnificent collection at Cambridge.

According to Mr. Howard Saunders (*Ibis*, 1871, p. 213), it has been met with as far west as Valencia, in Eastern Spain; and he has examined a specimen in the Museum at Valencia, which he then, without a specimen for comparison, pronounced to be the present species; but, without desiring to question his identification, I may remark that the locality appears to me to be somewhat far out of the range of the Olive-tree Warbler on the northern side of the Mediterranean; but as it is stated to breed in Algeria, it is by no means impossible that it should occur in Spain. Mr. C. A. Wright (*Ibis*, 1869, p. 255) remarks that it is said by Mr. Grant to be "common" in Malta; but he himself never met with it, and disbelieves the statement as to its occurrence there; nor, indeed, do I find it recorded from any of the countries north of the Mediterranean between Greece and Spain. In the former of these countries it appears to be extremely numerous; and, according to Lindermayer, it arrives in that country late in April or early in May, far later than the spring migration of other birds takes place, and it leaves again very early, about the first half of August.

According to Count von der Mühle (*Monogr. eur. Sylv.* p. 92), "it is a lively and very

sprightly bird, quarrelsome, and continually bickering with others of its species, like *Hypolais polyglotta*; but whether it makes the same sound by snapping its bill I am unable to say from personal observation, but think it highly probable. It inhabits the olive-groves, and is found there only on the olive-trees, being extremely shy, and difficult of approach; for though easily discovered by its song, still it assimilates so closely in coloration to the foliage of the olive-trees that it is exceedingly difficult to catch a glimpse of or to distinguish it from the leaves. It is continually moving about in the tree-tops, and is never met with in bushes, reeds, or near water, and therefore does not bear the least affinity to the Reed-Warblers, but affects the solitary naked-looking olive-groves; and when the wanderer is passing through these groves during the heat of a June day, and searches for a shady spot, he hears nothing but the shrill chirp of the cicada, which is to be met with in countless numbers on every tree, and the shrill searching cry of this Warbler. It places its nest on an olive-tree, and fastens it to one of the small boughs in such a manner that the bough passes through a portion of the nest itself. The nest is constructed with some care out of grasses, and is a tolerably close and strong structure, being lined with the woolly fibres of various species of thistles. Though closer-built and warmer than the nests of many species of Warblers, it is a far less artistic and elegant structure than that of its ally, *Hypolais polyglotta*. The eggs are deposited late in May or early in June, and are from three to four in number. In form they are rather elongated, oval, and in colour a rich rosy grey when fresh, but soon fade to dull greyish, and are marked with dark brown largish spots, between which are very small blackish dots. As it remains for so short a period in Greece, it is probable that it raises only one brood in the season."

It is found in Asia Minor; according to Dr. Krüper it is common in the larger olive- and oak-groves near Smyrna; and Canon Tristram states that it is confined to the olive- and oak-woods in the north of Palestine. It undoubtedly winters in Northern Africa; but, curiously enough, I find scarcely any notice of its having been met with there during the winter. Mr. Jesse, however, obtained a single example in Abyssinia; and I had a specimen in spring plumage collected by Rogers in Egypt, which I gave to Captain Shelley, in whose collection it now is. Von Heuglin does not refer to it in his work on the ornithology of North-east Africa. Mr. Carstensen (Naumannia, ii. pt. i. p. 77) says that he procured it in Tangier and Fez; and Canon Tristram (Ibis, 1860, p. 156) states that he shot it in Algeria, and took its nest there.

I have never seen the present species alive, and am indebted to my friend Mr. H. Seebohm, who has had ample opportunities of observing it in a state of nature, for the following excellent notes on its distribution in Greece and Asia Minor, and on its habits as observed by him in these countries:—" *Hypolais olivetorum* is by no means an uncommon bird in the olive-plantations on both sides of the archipelago. In the valleys between the rocky limestone mountain-ranges to the west of Athens, as also in the similar valleys to the east of Smyrna, wherever you find the olive, there, in spring, you are sure to hear, but by no means sure to see, this interesting warbler. Further north it becomes rarer. In the valleys around Mount Olympus it is seldom heard, and in the neighbourhood of Saloniki may be considered very rare. It is of course a migratory bird, arriving in the neighbourhood of Athens and Smyrna about the 1st of May, sometimes a few days earlier, sometimes a few days later. In Greece and Asia Minor this is a *very* late date for the arrival of summer migrants, some six weeks after the arrival of the Barn-

Swallow and House-Martin. As might be expected in a bird arriving so late, it is one of the earliest to leave. Dr. Krüper assured me that they migrate southwards as soon as the young are strong enough for the journey. Many leave towards the end of July; and early in August very few remain. This bird is very shy and retiring in its habits, seeking its insect food on the slender branches of the trees it frequents, like a *Phyllopneuste* or a *Parus*; and since it does not arrive until the leaves are fully out, it is a bird which would very easily escape the notice of naturalists who neglected to pay especial attention to the notes and songs of birds. Fortunately for the ornithologist, if not for the bird, the song of *Hypolais olivetorum* arrests the attention instantly. It is not likely to be mistaken for that of any other bird. It reminds you at first of the song of the Sedge-Warbler in its loudness and in the rapidity with which the notes are uttered, but in quality it is far superior. It would be a slight exaggeration to say that the Sedge-Warbler's voice was as harsh as a Sparrow's, and perhaps an equal exaggeration to assert that the Olive-tree Warbler's song was as rich as a Nightingale's. If somewhat monotonous, it must be admitted that the notes are loud, rich, and clear. As its name implies, this bird confines itself almost exclusively to olive-trees. In the valleys to the north of the Parnassus, where the olive is not cultivated, I did not meet with it, nor did we by any chance hear its familiar song on the mountains. It breeds in the olive-trees, making a rather slight and deep nest on the smaller branches, often where they fork. The chief material of the nest is thistle-down, with a little dry grass outside, and a few roots and a horse-hair or two as lining. The nest is very neatly finished at the top with cobwebs or other similar material. The eggs are seldom laid before the beginning of June, and rarely, if ever, exceed four in number, and are not likely to be confused with those of any other European bird. They are decidedly larger than those of any other European species of this genus, of the same pale reddish grey ground-colour, but not quite so red as the eggs of *polyglotta* or *icterina*, though by no means so grey as those of *Hypolais pallida*. The black spots are, if any thing, larger in proportion than those on the eggs of the birds just named, and have the same tendency to run into streaks. The final coating of ground-colour seems to be very opaque; and the underlying spots are so pale as to be scarcely noticeable. An average-sized egg measures $\frac{32}{40}$ by $\frac{23}{40}$ of an inch. The spots are generally distributed pretty evenly over the whole surface of the egg, sometimes, but very rarely, having a tendency to form a zone round the large end."

I possess the eggs of this species obtained in Greece and near Smyrna by Dr. Krüper, but can add nothing to the description given above by my friend Mr. Seebohm.

The specimen figured and described was obtained near Smyrna in May by Dr. Krüper.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a, ♀ *ad.* Smyrna, May 19th. *b*, ♂ *ad.* Smyrna, August 1st. *c*, *juv.* Attica, June 22nd (*Dr. Krüper*).

E Mus. Acad. Cantabr.

a. Zante, May 21st, 1836 (*H. E. Strickland*). Type of *H. olivetorum*.

E Mus. G. E. Shelley.

a. Egypt (*Rogers*).

HYPOLAIS OPACA.

(WESTERN OLIVACEOUS WARBLER.)

- Hypolais opaca*, Licht., Cab. Mus. Hein. i. p. 36 (1850-51).
Hypolais pallida, L. Gerbe, Rev. et Mag. de Zool. 2^e sér. iv. p. 174 (1852, nec Ehr.).
Hypolais opaca, Licht., E. F. v. Homeyer, Journ. für Orn. 1853, B, p. 92.
Phyllopneuste opaca, Licht. Nomencl. Av. p. 30 (1854).
Chloropeta pallida, Bp. Cat. Parzud. p. 6 (1856).
Hypolais arigonis, A. E. Brehm, Allg. deutsch. naturh. Zeit. iii. p. 467 (1857).
Hypolais cinerascens & *arigonis*, A. E. Brehm, Ill. Thierleben, p. 865 (1866).
Hypolais fuscescens, De Selys, fide Loche, Expl. Scient. d'Alg. Ois. i. p. 271 (1867).
Hypolais cinerascens, De Selys in litt. (28 June, 1852), fide Degl. & Gerbe, Orn. Eur. i. p. 506 (1867).

Cherna, Valencian; *Grauspötter*, German.

Figura nulla.

♂ *ad.* *Hyp. pallide* persimilis sed major, rostro latiore, remige primo longiore.

Adult Male (Valencia, 22nd June). Similar in coloration to *Hypolais pallida*, but larger in size, with a rather larger first primary and a broader bill. Total length about $5\frac{1}{4}$ inches, culmen 0.72, breadth of under mandible at base 0.3, wing 2.8, first primary extending 0.35 beyond the wing-coverts, and 1.1 shorter than the second, second 0.25 shorter than the third, third and fourth equal, tail 2.55, tarsus 0.9.

I HAVE hesitated somewhat in keeping the present bird separate from the Olivaceous Warbler (*H. pallida*, Ehr.), as in a series I find specimens which approach each other rather closely; but I find that, as a rule, the present species is fairly distinguishable by its larger size and broader bill, and have therefore considered it advisable to treat it as a distinct form. First described from Senegambia in 1850 by Dr. Cabanis, who made use of a name by which it appears to have been labelled (but not described) by Lichtenstein; it was again described in 1852 under the name of *H. pallida*, which title, however, belongs to the species usually called *H. elatica*. It appears to have been referred to by the Baron de Selys-Longchamps previous to 1852 as a distinct species, under the name of *Hypolais cinerascens*; but I cannot find that this title was published, or that any description was given; and on writing to Baron De Selys he informs me that he does not recollect having ever published any description, and believes that he only used the name in his museum catalogue. The range of the present species appears, so far as can at present be ascertained, to be somewhat restricted, as it is only known to occur in South-western Europe and South-western Africa. In Spain it is evidently common; as Mr. Howard Saunders has at dif-

ferent times received a considerable number of specimens of the bird as well as its nest and eggs from the neighbourhood of Malaga. Dr. A. E. Brehm, who described it as new under the name of *Hypolais arizonis*, writes (*l. c.*) that he found it common in the province of Valencia, and extremely numerous near Játiva de San Felipe. It breeds in Spain, but leaves the country after the breeding-season. Where it is met with it almost entirely replaces *Hypolais polyglotta*. Major Irby informs me that he did not find it at all common in the neighbourhood of Gibraltar, but that it is common in Morocco on the African side. Loche says that it is found near Behobie, on the frontiers of Spain, and he obtained a specimen near Marseilles, which is the most eastern locality in Europe whence I find it recorded. It is found in North-western Africa. Loche writes that it is "very common in Algeria, especially in the region near the coast, from the early part of May to the end of September, but only accidentally met with after that season. Tame and fearless in its habits, it frequents gardens and orchards. Its song is agreeable, clear and loud, and uttered whilst the bird is seated on a branch. It is extremely vivacious and elegant in its movements, affects the tall trees in preference to the bushes, and feeds principally on winged insects, which it catches on the wing with great ease. It is most numerous in the gardens of Marengo and Hamma, and the hillocks of Mustapha and Kouba, near Algiers, where we have watched it in a garden close to our house throughout the summer. Dr. Cabanis described it from a specimen in the Berlin Museum, obtained in Senegambia."

Dr. A. E. Brehm, who met with the present species in Spain, gives, in a work published in 1866, 'Illustrirtes Thierleben,' some interesting details respecting its habits, from which I translate the following notes:—"I first heard this Warbler in a flower-garden in Valencia. Its song attracted my attention, because it was unknown to me, though I recognized it as being that of one of a group with which I was acquainted, but a species new to me. When once I had my attention called to it I found no difficulty in finding it outside the walls of the town, and soon ascertained that it is generally distributed over South-eastern Spain, and much commoner than any of its congeners. It appears to avoid the mountains or hilly localities, and frequents the well-wooded localities on the plains, and especially affects the 'Huertas,' or plains covered with fruit-growing trees, which, being regularly irrigated, are fertile beyond conception. In the gardens within the limits of the town, along the promenades, and in the vineyards and olive-groves it is exceedingly numerous, so much so that in about twenty poplars standing together we heard twelve males singing. Although this species resembles the Icterine Warbler in general habits and resort, it differs extremely in its song and in its peaceable disposition when with others of its own species. I never saw two males pursuing each other; and I have often seen two pairs inhabiting, and have found their nests with eggs, on the same tree. This quietness of disposition compared with the Icterine Warbler strikes one at once; but its song distinguishes it also at once. Its call-note, which is uttered by both sexes, is the *tack, tack* so commonly heard from many species of Warblers; and its song, though not disagreeable, is a very simple ditty, which reminds one of some of the aquatic Warblers; and it has not the gift of mimicry possessed in so high a degree by the Icterine Warbler. In its movements it resembles that species, but is more lively. It appears to have become so used to the presence of man that it exhibits no signs of shyness, and may be watched close, appearing at home and at its ease in the smallest gardens in the town in the centre of blocks of buildings, and inhabits the public promenades, even when, like

the lovely Glorietta of Valencia, they are illuminated until after midnight. Its breeding-time is from early in June to the end of June. Each pair selects a large densely foliated tree; and the nest is placed at some distance above the ground, being fastened in the fork of a branch." I possess several nests with eggs of the present species, obtained near Malaga by a collector in the employ of Mr. Howard Saunders. These nests are large for the size of the bird, being larger and more strongly constructed than that of *H. olivetorum*, or even *H. icterina*. They are tolerably neatly built of dried grasses and fine roots, and carefully and closely lined with cotton and thistle-down. The eggs, four (or sometimes five) in number, closely resemble those of *Hypolais pallida*, but are, judging from the series in my collection, a trifle more boldly marked and larger in size, averaging $\frac{31}{40}$ by $\frac{23}{40}$ inch.

The specimen figured is the one described, and is in my collection.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a, ♂. Jativa, province of Valencia, Spain, June 22nd, 1856 (*A. E. Brehm*). *b*, ♀. Malaga, June 15th, 1871 (*H. Saunders*).

E Mus. Howard Saunders.

a, ♀. Malaga, June 7th. *b*, ♀. Malaga, June 18th, 1871 (*H. S.*).

E Mus. H. B. Tristram.

a, ♂. Europe (*Verreaux*). *b*. Algiers (*Loche*).



Mintern Bros imp

UPCHERS WARBLER
HYPOLAIS LANGUIDA

HYPOLAIS LANGUIDA.

(UPCHER'S WARBLER.)

Curruca languida, Ehr. Symb. Phys. fol. 66 (1829).*Salicaria languida* (Ehr.), Keys. & Blas. Wirbelth. Eur. p. 54 (1840).*Hypolais languida* (Ehr.), Cab. Mus. Hein. i. p. 37 (1850-51).*Hippolais upcheri*, Tristram, P. Z. S. 1864, p. 438.*Figura nulla.*

♂ *ad. H. pallidæ* persimilis sed paullo major et grisescentior, rostro graciliore, remige primario extimo valdè brevior et attenuato.

Adult Male (Magas, Baluchistan, 28th March). In general coloration of plumage similar to *H. pallida*, but a trifle greyer in general tinge; bill narrower and more slender; first primary much shorter and narrower, more resembling that of *H. olivetorum*. Total length about $5\frac{1}{4}$ inches, culmen 0.75, wing 3.1, tail 2.75, tarsus 0.9; first primary scarcely as long as the primary coverts, 1.8 shorter than the second; second 0.2 shorter than the third, third and fourth about equal, soft parts as in *H. pallida*.

THE present species, distinguishable from *Hypolais pallida* by its somewhat larger size and peculiarly short and narrow first primary, appears to have a somewhat restricted range, as it is only recorded from Palestine, Syria, North-east Africa, and Persia. First discovered in Syria, and described by Ehrenberg, who only obtained a single specimen, it was redescribed by Canon Tristram, who met with it in Palestine, and writes (*Ibis*, 1867, p. 82) as follows:—"Our first recognition of Upcher's Warbler was from finding a nest in an orchard under Mount Hermon, from which a bird stole off, which I took to be *H. elaica*, till I noticed the eggs to be of a rich salmon ground, and almost as large as those of the Olive-tree Warbler. I waited till the bird returned, and then secured both parents, when I ascertained that I had got hold of an exactly intermediate species. Its note is unlike that of *H. elaica*; and it frequents very different localities, the uplands of Hermon and Lebanon, in the vineyards, and oak coppices. We found this bird very abundant in restricted localities." Von Heuglin (*Orn. N.O.-Afr.* p. 297) says that it is found in Egypt and Syria, but is much rarer than *H. pallida*; and Mr. Blanford (*Geol. & Zool. of Abyss.* p. 379) shot specimens in Abyssinia in the Lebka valley and Samhar. It has, he says, "precisely the habits of the Indian *Acrocephalus dumetorum* of Blyth, living amongst thick bushes, and hunting about the branches for insects, uttering every now and then a sharp cry like '*tchick-tchick*.' It is a restless, active little bird." Mr. Blanford has also lately obtained several of these Warblers in Persia and Baluchistan, all of which, together with his MS. notes, he has most generously placed at my disposal. He states that "it is far from rare in Southern Persia and the higher parts of Baluchistan, being found indifferently in gardens, in wooded ravines, and in bushes on comparatively open plains. It is less abundant than *H. pallida*, Ehr., except in the more open and semi-desert country, in which the latter was never observed."

Both Canon Tristram and Mr. Blanford found the nest of this species. The former writes (*l. c.*) that "the nest was usually placed in a bush of *Vitex agnus-castus*, or Linden tree, never more than a yard or two from the ground, neat and conspicuous. Its eggs most resemble those of *H. polyglotta* in ground-colour, but are twice the size;" and Mr. Blanford says that he "took the nest, which contained three well-incubated eggs. The nest was in a small bush in a plain on which shrubs and low bushes were rather thinly sprinkled over the ground. At the foot of the same bush was a nest of *Saxicola deserti*. The *Hypolais* nest consisted of a very neat cup of grass mixed with spiders' webs and the down of some plants. The eggs were pinkish white with small scattered spots and irregular streaks of chocolate-brown, and measure 0·76 by 0·53 inch."

I possess two eggs of the present species, collected by Canon Tristram in Palestine, which closely resemble those of *H. olivetorum* both in colour and markings, but are smaller in size, measuring only $\frac{2.9}{40}$ by $\frac{2.1}{40}$ inch.

The specimen figured is one kindly lent to me by Mr. Blanford, as I do not possess this species in my collection.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. B. Tristram.

a, ♀. Palestine, June 3rd, 1864 (*H. B. T.*).

E Mus. Ind. Calc.

a, ♂. Magas, Baluchistan, March 28th. *b*, ♂. Nurmanshir, S.E. Persia, April 15th. *c*, *d*, ♂. Nurmanshir, April 18th and 19th. *e*, ♀. West of Bam, April 23rd. *f*, ♀. Parpa, 130 miles E. of Shiraz, May 31st. *g*, *h*, ♂, *i*, ♀. E. of Shiraz, June 3rd and 5th (*W. T. Blanford*).

HYPOLAIS PALLIDA.

(OLIVACEOUS WARBLER.)

- Curruca pallida*, Ehr. Symb. Phys. fol. 66 (1829).
Curruca andromeda, Ehr. loc. cit. (1829).
Curruca maxillaris, Ehr. loc. cit. (1829).
Salicaria elæica, Lindermayer, Isis, 1843, p. 342.
Hippolais elæica (Lind.), Gerbe, Rev. Zool. 1844, p. 440.
Ficedula ambigua, Schlegel, Rev. Crit. pp. xxvi et 54 (1844).
Ficedula elæica (Lind.), Schleg. Obs. sur les S. G. des Pouillots, p. 27 (1848).
Sylvia preglüi, Frauenfeld, Verh. zool.-bot. Ver. Wien, i. p. 53 (1852).
Hypolais verdati, Jaub. Rev. Zool. 1855, p. 70.
Sylvia elæica (Lind.), Von der Mühle, Monogr. eur. Sylv. p. 93 (1856).
Chloropeta elæica (Lind.), Bp. Cat. Parzud. p. 6 (1856).
Salicaria pallida (Ehr.), Severtzoff, Turk. Jevot. pp. 66, 129 (1873).

Figura unica.

O. des Murs, Icon. Ornith. pl. 58. fig. 1.

♂ *ad.* corpore suprà pallidè olivascenti-brunneus, dorso clariore et uropygio vix pallidiore: striâ indistinctâ flavicanti-cervinâ a rostro supra oculum utrinque productâ: remigibus saturatè brunneis, secundariis intimis pallidioribus, et omnibus pallidè brunneo marginatis: rectricibus saturatè brunneis, marginibus vix pallidioribus: corpore subtùs albo, vix cervino lavato, hypochondriis pallidè brunneo adumbratis: gulâ et abdomine centrali albis: rostro brunnescenti-corneo, mandibulâ ad basin sordidè flavicante: pedibus pallidè cornescenti-brunneis: iride fuscâ.

♀ haud a mare distinguenda.

Adult Male (Egypt). Upper parts pale dull olive-brown, clearer on the back in colour, and rather lighter on the rump; from the base of the bill over the eye a rather indistinct yellowish stripe; wings dark brown, the inner secondaries lighter in colour, all the feathers having lighter margins; tail dark brown, very narrowly edged with lighter brown; underparts buffy white, the throat and the centre of the abdomen almost pure white; flanks washed with pale brownish; bill horn-brown, dull yellowish at the base of the lower mandible; legs pale horn-brown; iris dark brown. Total length about 5 inches, culmen 0.62, breadth of under mandible at base 0.22, wing 2.63, first primary extending 0.27 beyond the wing-coverts, and 1.15 shorter than the second, second 0.2 shorter than the third, third and fourth equal, tail 2.2, tarsus 0.83.

Female (Guiken, Asia Minor, 27th May). Similar to the male, but, if any thing, a trifle greyer on the upper parts.

THE present species inhabits South-eastern Europe and Western Asia in the summer season, migrating southward into Africa during the winter; but in Western Europe and North-western

Africa it is replaced by a closely allied form (*Hypolais opaca*), which many ornithologists unite with it, but which I have preferred to keep distinct. My friend Mr. Blanford, to whom I am indebted for the loan of all his MS. notes on the Persian Warblers, has gone so far as to unite the present species, the large-billed form of *H. caligata* (usually known under the name of *Hypolais rama*), and *Hypolais caligata*, though he keeps a species which he describes as *Hypolais opaca* (from a single specimen obtained at Shiraz) distinct. After a most careful examination of his series of specimens, as well as a large series from other localities, I cannot agree with him in this conclusion, though I must confess that amongst the Persian specimens brought home by Mr. Blanford there are some most puzzling birds which could with equal propriety be referred to either species. I find, however, that, taking a series of Indian specimens of *Hypolais rama* and comparing them with an equal number of our European *Hypolais pallida*, it will be found that the latter are invariably larger and paler; and on comparing a series of nests and eggs of our bird with those of *H. rama*, obtained by Mr. Blanford in Persia, the difference of size and general character in these is very striking. Up to the present time I have not succeeded in obtaining the nest and eggs of *Hypolais caligata*, which is the small-billed form of *H. rama*, and which is not uncommon in Eastern Europe, whereas it appears doubtful if *H. rama* occurs within the limits of the Western Palearctic Region, being there replaced by *Hypolais pallida* and *H. caligata*, which fact strengthens me in my opinion that they should be kept distinct. It is, however, one of those cases where those naturalists who prefer to regard all three (or even, including *Hypolais opaca*, all four) as races or forms of the same species have as much right on their side as those who, like myself, raise each form to the rank of subspecies and treat them as distinct.

As above stated, the present species does not occur in Western Europe; but it has been recorded from Italy, Signor Magni-Griffi having obtained two specimens in April 1863, which are now in the Museum at Pisa, where they were examined by Count Salvadori, who states that they are undoubtedly referable to the present species. Nor does it appear to be at all common further westward than Greece, where, however, it is stated to be numerous. My friend Mr. H. Seebohm, who collected in company with Dr. Krüper in Greece and Asia Minor, writes to me as follows:—"If there be any truth in the theory that every animal has a centre of distribution, whence it originally sprung, and where it continues to be most plentiful, then we must assign the island of Naxos, in the Grecian archipelago, to *Hypolais pallida*. Dr. Krüper has often given me an animated description of the abundance of this bird in this locality, especially in the gardens, where it frequents the olive-trees, pomegranates, lemons, and other fruit-trees, and is the commonest bird on the island. Its habits are almost precisely the same as those of *H. olivetorum*; but it is by no means so shy and retiring, its cheerful little song being often heard in the gardens close to the cities of Athens and Smyrna. It is pretty generally distributed throughout the whole of Greece, becoming rarer as you enter Turkey; but it is only found in the wooded valleys, not ascending the mountains higher than the regions of the olive. It arrives in Greece and Asia Minor amongst the latest migrants in the last week in April, and leaves again early in August, remaining little more than three months in the countries where it breeds." It is said to be rarer in Turkey; but I have specimens obtained by Mr. Robson near Constantinople. In Southern Russia it does not appear to occur, or at least it is not recorded, being replaced, it seems, by

Hypolais caligata; but in Asia Minor it is common, and, according to Canon Tristram (Ibis, 1867, p. 81), in Palestine it "abounds everywhere, and, returning in the end of March (our first specimen was shot March 23rd), takes the place of the Willow-Wren (*Phyllopneuste trochilus*), which has by that time moved its camp northwards. . . . *H. elatica* is the most common species in Palestine, frequenting, however, chiefly the warmer valleys and the plains of Jordan;" and, again (P. Z. S. 1864, p. 438), he writes that it is "extremely abundant in all parts of the country in summer. Returns to Jericho in March, and to the slopes of Hermon in April. Resorts to low shrubs and thickets, and especially to marshy spots, in preference to groves. In North-eastern Africa it is common; and Captain Shelley (B. of Egypt, p. 100) says it "is the most abundant Warbler in Nubia, and is not unfrequent in Egypt; but I have not met with it north of Dendera, although it must be found over the whole country, as it is not very uncommon in South-eastern Europe. In Nubia it takes the place of the Willow-Warbler and Chiffchaff, but prefers to live among the higher boughs of the sount trees instead of the low thick herbage." Mr. Jesse met with it at Gelamet and Rairo, in Abyssinia; and Mr. Blanford includes it in his list of the birds of that country. In North-western Africa it appears to be replaced by *H. opaca*, with which it has been confused.

To the eastward it occurs as far as Persia, where it is common; and here its range joins that of *H. rama*, by which species it is replaced eastward of that country. Sabanäeff states that the present species occurs in Western Turkestan, in the Karatau Mountains, and from the rivers Aris, Kallas, and their tributaries, to the mouth of the Syr Darja and Lake Aral, and throughout the Zarevshan valley. It breeds at an altitude of from 1000 to 6000 feet—that is to say, in the grassy steppes and apple-district. In the district below 1000 feet altitude it is a partial migrant, but does not breed there. Count von der Mühle (Monogr. eur. Sylv. p. 95) says that, "like the Olive-tree Warbler, it is always seen in the tops of the olive-trees, and never elsewhere. More uneasy and restless than its congener, it is much more shy, and when disturbed flies from tree to tree, but, after flying some distance, returns quickly to where it first was, after having led the pursuer astray from its nesting-place. It sings continuously, and is quarrelsome, driving all intruders away from the nesting-locality it has taken possession of. Its song is more melodious than that of *Hypolais olivetorum*; and its clear note reminds one much of that of the Icterine Warbler. Although its song and uneasy habits render it easily observable, it is most difficult to obtain, as it is continually moving about amongst the olive-tree foliage, to which it so well assimilates in colour; and being so small in size it is not easily distinguished amongst the dense foliage."

The Olivaceous Warbler breeds numerously in Greece; and Mr. H. Seebohm, who obtained many of its nests, informs me that "it builds a very neat and compact little nest under the slender drooping branch of an olive-tree, not exactly suspended, like that of the Goldcrest, but so placed as to be almost entirely concealed by overhanging leaves. The nest, like that of *H. olivetorum*, is composed chiefly of brown thistledown and dry grass; but moss, roots, and lichens are often found mixed up with the other material, and the lining has generally one horsehair at least. The eggs are laid about the first of June, and are generally four in number, very rarely five. They exactly resemble the eggs of *H. opaca*, but are on an average a size smaller, measuring usually about $\frac{27}{40}$ by $\frac{20}{40}$ of an inch. They are grey, with a tinge of dove-

colour, with dark spots and specks, mostly round, but now and then running into streaks. The underlying spots are very indistinct. The spots are generally pretty evenly distributed over the whole surface; but occasionally they are collected in a zone round the large end. The song of *H. pallida* becomes as familiar in the olive-yards of Greece and Asia Minor as that of the Willow-Warbler in our English copses. It reminded me most of the song of the Whitethroat; but it is rather louder, and not quite so rapidly uttered." Canon Tristram (*Ibis*, 1867, p. 82) gives some careful details respecting the nidification of the present species, which, agreeing fully with what is given above, I refrain from quoting.

Like its congeners the present species is strictly insectivorous, and feeds on small insects which it obtains amongst the foliage of the trees on which it lives.

The specimen figured, on the same Plate with *Hypolais polyglotta*, is an adult male from Egypt in my own collection.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a, ♂. Ortakeuy, June 10th, 1871 (*Robson*). *b*. Asia Minor, May 27th, 1870 (*Robson*). *c*, ♂. Egypt (*Shelley*).
d, ♂. Attica, June 22nd, 1867 (*Dr. Krüper*). *e*, ♀. Smyrna, June 28th, 1871 (*Dr. Krüper*). *f*, ♂.
Jericho, April 14th, 1864 (*H. B. Tristram*).

E Mus. G. E. Shelley.

a, ♂. Nubia, April 7th, 1870 (*G. E. S.*). *b*, ♀. Nubia, April 9th, 1870 (*G. E. S.*).

E Mus. H. B. Tristram.

a, ♂. Kishon, March 22nd, 1864 (*H. B. T.*). *b*, ♂, *c*, ♂. Caiffa, Palestine, March 24th, 1864 (*H. B. T.*).
d, ♂. Palestine, March 9th, 1864 (*H. B. T.*). *e*, ♂, *f*, ♀. Palestine, April 1864 (*H. B. T.*).



BOOTED WARBLER.

HYPOLAIS CALIGATA

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HYPOLAIS CALIGATA.

(BOOTED WARBLER.)

- Motacilla salicaria*, Pall. Zoogr. Rosso-As. i. p. 493 (1811, nec Linn.).
Sylvia caligata, Licht. in Eversm. Reise nach Buchara, p. 128 (1823).
Sylvia rama, Sykes, P. Z. S. 1832, p. 89, partim.
Iduna (Lusciola) caligata (Licht.), Keys. & Blas. Wirbelth. Eur. pp. lviii & 190. no. 235 (1840).
Sylvia scita, Eversm. Add. Pall. Zoogr. fasc. iii. p. 12 (1842).
Salicaria caligata (Licht.), Schlegel, Rev. Crit. p. 30 (1844).
Calamodyta caligata, G. R. Gray, Gen. of B. vol. i. p. 172 (1844-49).
Calamoherpe caligata (Licht.), Degl. Orn. Eur. i. p. 576 (1849).
Calamoherpe scita (Eversm.), Bp. Consp. Gen. Av. i. p. 285 (1850).
Iduna salicaria (Pall.), Bp. tom. cit. p. 295 (1850, nec Linn.).
"Iduna caligata, Gray" (ubi?), fide Bp. tom. cit. p. 295 (1850).
Phyllopneuste rama (Sykes), Jerdon, B. of India, ii. p. 189 (1863, partim).
Hypolais caligata (Licht.), Degl. et Gerbe, Orn. Eur. i. p. 510 (1867).
Iduna caligata (Licht.), G. R. Gray, Hand-list, i. p. 209. no. 2967 (1869).
Jerdonia agricolensis, Hume, Ibis, 1870, p. 182.
Calamodyta agricolensis (Hume), Tristram, Ibis, 1870, p. 494.

Figuræ notabiles.

Naumann, Vög. Deutschl. pl. 375; Bree, B. of Eur. pl. to p. 76.

Ad. corpore suprâ grisescenti-brunneo, pileo saturiore et uropygio vix pallidiore, striâ superciliari pallidè cervinâ: remigibus fuscis, omnibus, cum tectricibus alarum, rufescente brunneo marginatis: rectricibus fuscis, pallidiore marginatis: corpore subtùs albedo, pectore cum hypochondriis cervino lavatis, mento et gulâ albis: rostro brunnescenti-corneo, mandibulâ pallidiore: pedibus pallidè brunneis: iride fuscâ.

Juv. adulto similis sed rufescentior, remigibus cum tectricibus alarum latiùs rufescente brunneo marginatis: corpore subtùs rufescente cervino lavato, sed mento albo.

Adult (Syr Darja, 28th July). Upper parts greyish brown, with a slight warm reddish tinge; from the base of the bill, passing over the eye, a tolerably distinct buffy streak; crown darker than the back, and rump rather lighter: quills dark brown, all, as well as the wing-coverts, having reddish brown lighter margins; tail brown, with lighter margins to the feathers; underparts white, on the flanks and sides of the breast washed with warm buff, and to a slight extent similarly tinged on the abdomen; chin and throat pure white; sides of the neck coloured like the back, but rather paler; beak dark brownish horn, the under mandible lighter; iris brown; legs dull brown. Total length about 4·75 inches, culmen 0·53, gape 0·58, wing 2·45, tail 2·05, tarsus 0·85; first primary nearly 0·3 inch longer than the primary coverts, and 1·05 shorter than the second, which, again, is 0·18 less than the third, which last is the longest.

Young (Tjubuk, S.E. Ural, 23rd July). Resembles the adult, but has the plumage more rufous, the margins to the wing-feathers are broader and more rufous, and the underparts are washed with pale rufous buff, except that the chin is white. In this, as well as a still younger individual received from Mr. Sabanäeff, I observe that the first primary is proportionally larger than in any of the adult birds.

Obs. Although this bird was called *caligata*, under the impression that the tarsus was covered with only one scale, this is not the case, though in very old examples the scutella covering the tarsus are grown together, so that the divisions are not easily visible; and hence, doubtless, the mistake has arisen.

THIS small Warbler is one which for long has been but little known, and has therefore been referred by various authors to very different genera. Later investigations, however, have clearly shown that it does not belong to any of the groups in which it has hitherto been usually placed, but is a true *Hypolais*, closely allied to the Indian species known as *Hypolais rama*, and more distantly related to *H. pallida*, Ehr. (*H. elatica* auctt.). In Europe proper it is a rare species, being only met with in the extreme east, except that it has once been recorded (J. f. O. 1856, p. 71) by Gätke as having been met with on Heligoland. It has not been recorded from anywhere else west of Russia, where it appears to be not uncommon in some localities. Mr. Meves says (Öfv. K. Vet. Ak. Förh. 1871, p. 754) that when travelling in Northern Russia, about seven versts from the post station Tichmanskoi, near the Latscha lake, on the 4th July, he heard a powerful, sweet song, quite unknown to him, uttered by a small Warbler, which flew whilst singing from bush to bush on a small marshy place overgrown with willow bushes. He was able to observe it quite close, and shot it, but lost it in the dense grass. When in St. Petersburg he saw specimens of the present species, and states that he is sure that the bird he saw was really *H. caligata*. He describes the song as something like that of *Hypolais icterina*, but also resembling that of the Sedge-Warbler. Eversmann, who met with this species in the Southern Ural, and who obtained the specimen from which the original description by Lichtenstein was taken, says that he only met with it in that locality, and that it is not particularly numerous, being very shy and but seldom seen. It frequents, he says, places overgrown with low bushes. I possess also specimens from the Ural, collected by Mr. Meves and Mr. Sabanäeff, and am informed by the latter gentleman that he met with it throughout the Ural, especially in the northern portion of the country he explored, but he did not meet with it on the banks of the rivers which flow through the black-earth plains. Its range appears to extend southward, or rather south-eastward, from here, as it does not occur in Persia, where, Mr. Blanford remarks, *Hypolais rama* (the large-billed bird) alone occurs. It is, however, found in Turkestan, whence I have specimens collected by Severtzoff on the Syr-Darja, which agree precisely with examples from the Ural, and from the Kirghis steppes to the north-east of the Caspian, from which latter locality I have the bird, egg, and nest. Severtzoff writes (Turk. Jevotnie, p. 66) that it breeds, but is rare, in the north-western portion of Turkestan (comprising Karatau, the western Thian-shan mountains, the upper portions of the rivers Aris, Keless, Chirchick, and their tributaries, the lower Syr-Darja, from the sources of the Aris to Lake Aral, and the delta of the Syr-Darja), and also in the south-western (comprising the Chodjent district, the entire Zarevshan valley, the Syr-Darja river, and the steppes between that river and the Kisil-cum). It is, he

further states, found up to an altitude of about 6000 feet. It is a winter visitant to the north-western portion of India, where for long it was confused with *Hypolais rama*. I possess examples from Etawah, obtained late in September and in December, and have seen many other specimens from India, all obtained in the winter season; therefore it does not appear to breed in that country. Pallas speaks of it as being found in Dauria; but apparently there is some mistake in this statement, as the later travellers have not met with it.

Scarcely any thing is known respecting the habits of this species; and until quite lately its nest and eggs were quite unknown; but I am fortunately now in possession of these latter, having secured the first that have been sent over here, and exhibited them at a meeting of the Zoological Society a few weeks ago. They are the more interesting as they prove that this bird is a true *Hypolais*; and although it differs from *Hypolais rama* in scarcely any other respect than in the smaller size of the bill, yet its eggs and nest are very distinct: for the egg is smaller and more pink in tinge; and whereas the nest of *H. rama* is loose and carelessly built, that of the present species is a neat structure, carefully built of grass bents, fine roots, and neatly finished and lined in the inside with very fine rootlets, hairs, and a little wool; it is cup-shaped, and most nearly resembles the carefully finished nest of *Hypolais polyglotta* of any of this group. In size the nest measures 3.75 inches outside diameter, and 2.15 inside diameter, the depth of the cup being 1.65. The egg is that of a true *Hypolais*, but is much smaller than that of any other of the group, not excepting *Hypolais rama*, as it measures only $\frac{2.4}{40}$ by $\frac{1.9}{40}$ inch. It is pale pinky white or salmon-colour, and is marked with blackish spots, which are scattered over the surface of the egg, though rather more abundant near the larger end; and there are also a few purplish underlying shell-markings showing round the edges of some of these surface-spots. I have no data as to the position of the nest, or the nature of the locality where it was found; but the nest looks as if it had been placed in the fork of a bush.

The specimens figured are an adult bird, obtained on the Syr-Darja by Severtzoff, and a young male, obtained by Mr. Meves at Tjubuk, in the South-east Ural, both being in my collection.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a, ♂ *juv.* Tjubuk, South-east Ural, July 23rd, 1872 (*Meves*). *b*, ♂ *juv.* Ekaterinburg district, July 23rd, 1872 (*Sabanäeff*). *c*, ♂. Kirghis steppes, June (*W. Schlüter*). *d*. Syr-Darja, Turkestan, June 25th. *e*. Syr-Darja, July 28th, 1858 (*Severtzoff*). *f*, ♂. Etawah, India, December 12th, 1868 (*W. E. Brooks*). *g*, ♀. Etawah, September 27th. *h*, ♂. Etawah, October 18th, 1869 (*W. E. Brooks*).

E Mus. Berol.

a. Type of *Sylvia caligata* (*Eversmann*).

Genus AËDON.

Turdus apud Latham, Ind. Orn. i. p. 334 (1790).

Sylvia apud Temminck, Man. d'Orn. ed. 2, i. p. 182 (1820).

Aëdon, Boie, Isis, 1826, p. 972.

Curruca apud Ehrenberg, Symb. Phys. Aves, fol. 66 (1829).

Agrobates apud Swainson, Classif. of B. ii. p. 241 (1837).

Erythropygia apud Bonaparte, Comp. List, p. 13 (1838).

Salicaria apud Keyserling & Blasius, Wirbelth. Eur. p. lv (1840).

Calamoherpe apud Schlegel, Vog. Nederl. p. 141 (1858).

ALTHOUGH I have followed Degland and Gerbe, Sundevall, and Professor Newton in placing the present genus close to *Acrocephalus* and *Hypolais*, it appears almost doubtful if it should not be placed nearer to the Crateropodinaë; for in many respects it assimilates very closely to *Thamnobia* (a genus belonging to the Crateropodinaë), near which it has been placed by several authors. Von Heuglin places it near *Malurus*. Mr. Seebohm, who has lately been working at the Warblers, informs me, however, that he intends to include *Aëdon* in the genus *Sylvia*.

In habits these birds differ considerably from the aquatic Warblers, amongst which they have been grouped by so many authors; for they are by no means constant residents in damp, moist localities, but are more frequently to be met with in very arid places; and in general habits they are not at all unlike the species belonging to the genus *Argya*. They nest, however, in moister portions of the country than those birds, and are said to be fond of placing their nests, which are almost always built in some conspicuous situation, on tamarisk trees. The nest is large, and stoutly built of straws, lined with wool and sometimes hairs; and generally a small piece of serpent's skin is deposited loosely in the nest—for what reason, has not yet been satisfactorily ascertained. The eggs are peculiarly like those of the Tawny Pipit. The immature plumage does not differ much from the adult dress, and is unspotted.

These birds are insectivorous, and obtain their food chiefly on the ground. Their call-note is harsh; but their song is sweet and powerful. Their flight is not unlike that of some of the smaller Shrikes.

Aëdon galactodes, which I take to be the type of the present genus, has the bill strong, curved, and long, slightly notched, nostrils small, oval, supernal, gape without bristles; first quill short, the second nearly as long as the third and fourth, which are longest; tail long, much graduated, and richly marked; tarsi long, with broad anterior scales; toes short, claws small.

Two species, *Aëdon galactodes* and *Aëdon familiaris*, inhabit the Western Palæarctic Region; and the genus is found only in the Palæarctic and Ethiopian Regions.



Muntern Bros imp

GREY BACKED WARBLER.
AEDON FAMILIARIS

RUFIOUS WARBLER.
AEDON GALACTODES

AEDON GALACTODES.

(RUFIOUS WARBLER.)

- Reed-Thrush*, var. A, Latham, Gen. Synopsis, ii. pt. i. p. 33 (1783).
Turdus arundinaceus, var. β, Latham, Ind. Orn. i. p. 334 (1790).
Sylvia galactotes, Temm. Man. d'Orn. ed. 2, i. p. 182 (1820).
Turdus rubiginosus, Meyer, Taschenb. deutsch. Vogelk. iii. p. 66 (1822).
Aëdon galactodes, Temm., Boie, Isis, 1826, p. 972.
Sylvia rubiginosa, Temm. Man. d'Orn. ed. 2, iii. p. 129 (1835).
Agrobates galactodes (Temm.), Swains. Classif. of Birds, ii. p. 241 (1837).
Erythropygia galactotes (Temm.), Bp. Comp. List, p. 13. no. 87 (1838).
Salicaria galactodes (Temm.), Keys. & Blas. Wirbelth. Eur. pp. lv. 183 (1840).
Aëdon minor, Cab. Mus. Hein. i. p. 39 (1850).
Aëdon pallens, L. Brehm, J. f. Orn. 1856, p. 441.
Aëdon pallens brachyrhynchos, id. ut suprâ.
Aëdon pallens macrorhynchos, id. ut suprâ.
Aëdon galactodes brachyrhynchos, id. ut suprâ.
Aëdon galactodes macrorhynchos, id. ut suprâ.
Aëdon meridionalis, id. ut suprâ.
Aëdon meridionalis brachyrhynchos, id. ut suprâ.
Aëdon meridionalis macrorhynchos, id. ut suprâ.
Calamoherpe galactodes (Temm.), Schlegel, Vog. Nederl. p. 141 (1858).
Aëdon rubiginosa (Temm.), Wright, Ibis, 1864, p. 72.

Rufous Warbler, *Rufous Sedge-Warbler*, English; *Agrobate rubigineux*, *Bec-fin rubigineux*, French; *Alzarrabo*, *Alzacola*, *Colirojo*, *Colirubio*, Spanish; *der rostfarbige Sänger*, German.

Figuræ notabiles.

Temminck, Pl. Col. 251. fig. 1; Werner, Atlas, *Insectivores*, pl. 22; Fritsch, Vög. Eur. taf. 26. fig. 4; Naumann, Vög. Deutschl. taf. 367. figs. 2, 3; Gould, B. of Eur. pl. 112; id. B. of Great Britain, ii. pl. liii.

♂ *ad.* suprâ rufescenti-cinnamomeus, uropygio et supracaudalibus ferrugineis: remigibus saturatè brunneis rufescente marginatis, primariis intimis et secundariis albicante apicatis: rectricibus duabus centralibus ferrugineis immaculatis, reliquis ferrugineis albo apicatis et maculâ magnâ subapicali notatis: corpore subtus albo, vix brunnescente griseo lavato: striâ superciliari albicanti-cervinâ: loris et maculâ pone oculum saturatè brunneis: colli lateribus et hypochondriis pallidè brunneo lavatis: rostro brunnescenti-corneo, ad basin mandibulâ flavicante: iride fuscâ: pedibus pallidè brunneis.

♀ *haud a mare distinguenda.*

Adult Male (Egypt). Crown, nape, back, and scapulars dull brownish rufous, the rump and upper tail-coverts almost fox-red; quills dark brown, on both webs margined with rufous nearly to the tip, the inner primaries and secondaries tipped with dirty white; wing-coverts margined with very pale sandy brown, almost whitish; tail rounded, the central rectrices bright fox-red, the remainder red, the outermost broadly terminated with white, which dwindles in size until on those nearest the centre it is almost lost; all, except the central two rectrices, with a tolerably large subapical black patch; underparts white, with a brownish grey tinge; over the eye a tolerably broad buffy white streak; lores and a mark behind the eye blackish brown; sides of the neck and flanks washed with pale brown; bill dull brown, yellowish at the base of the under mandible; iris dark brown; legs pale brownish. Total length about 6·75 inches, culmen 0·72, wing 3·5, tail 3·12, tarsus 1·0; first primary slightly less than 0·2 shorter than the primary coverts, 1·7 less than the second, second 0·2 shorter than the third, which latter is about equal to the fourth, these two being the longest.

Female. Undistinguishable from the male.

Young. The young birds, even in the first plumage, when fresh fledged, closely resemble the adult birds in colour, but have the quills and wing-coverts margined with pale fulvous.

THE Rufous Warbler, which for long was erroneously supposed to be one of the aquatic Warblers, and called the Rufous Sedge-Warbler, inhabits Southern Europe, but has been met with, as a rare straggler, as far north as Great Britain, where, however, it has only twice occurred. Professor Newton, in the edition of Yarrell's 'British Birds' he is now editing, speaking of its occurrence in England, writes (pp. 355, 356) as follows:—"For the knowledge of the first occurrence of this handsome bird in England we are indebted to Mr. Borrer, who has already laid this work under many obligations by his communications, and in the 'Zoologist' (p. 4511) stated that on September 16th, 1854, Mr. Swaysland noticed at Plumpton Bosthill, about six miles from Brighton, a bird which he at first took for a cream-coloured variety of the Nightingale. Having obtained a gun and returned to the spot, he found the bird about twenty yards from where he first observed it. It was very wary, flying always to the further side of some furze bushes, and mounting into the air some fifteen yards, with a flight resembling that of the young of the Red-backed Shrike. He at last shot it. Mr. Borrer adds:—"The bird on dissection proved to be a male, and would shortly have moulted, one or two young feathers of the primaries having made their appearance on each wing; these are darker than the old ones. The feathers, also, on the back and tail, especially the central ones of the latter, are much worn. I borrowed the bird and sent it to Mr. Yarrell." It is now in the collection of Mr. Fuller-Maitland. In November 1859, the late Mr. G. R. Gray recorded (Ann. & Mag. N. H. ser. 3, iv. p. 399) the occurrence of a second example. This was shot in September 1859, a very strong south wind having prevailed for nearly a week previously, at the Start, in Devonshire, by Mr. W. Llewellyn, and given by him to the British Museum. The bird was not observed until it was shot, at which moment it was flying over a stone wall, within a hundred yards of the sea. It was exceedingly thin, and had lost its tail." Besides the occurrences above recorded in England, it is said to have been met with on Heligoland; but, according to Professor Blasius (Ibis, 1862, p. 66), the birds obtained there are not the present species, but *Aedon familiaris*, Ménétr., the eastern form of the present species.

The Rufous Warbler does not seem to have been met with in France; but, according to Professor Barboza du Bocage, it is common in Portugal, and in Spain it is a common summer resident, and numbers breed in that country. Mr. Howard Saunders (*Ibis*, 1871, p. 214) says that it is "abundant in Southern Spain in summer, breeding in the vineyards, frequently between the leaves of the cactus, of which the hedges are composed;" and Lord Lilford writes to me as follows:—"I found it pretty common in Andalucia, near Seville, in May 1869, and generally saw it about the prickly-pear hedges, and occasionally in dry bush-covered localities, vineyards, &c. It occurs in Central Spain, though I did not meet with it there. In the province of Murcia it is known by the name of 'Alzarrabo,' from its habit of constantly lifting and lowering its tail after the fashion of the Redstarts." According to Professor Newton (*l. c.*), Mr. Gould possesses a specimen said to have been obtained in Savoy; and Count Salvadori (*Ucc. d'Italia*, p. 118) records one instance of its occurrence in Italy, a specimen having been obtained in the valley of Polcevera, in Liguria. Mr. C. A. Wright, who records its occurrence at Malta, says that "it is rare, and does not occur annually. It has most often been observed in September. One taken in that month in 1857 lived for some time in captivity." The present species, so far as I can judge, does not occur in Greece or Asia Minor, being there replaced by *Aedon familiaris*. Canon Tristram certainly says (*l. c.*) that *Aedon galactodes* is the form found in Greece; but I have procured specimens from Dr. Krüper, collected by him in that country as well as in Asia Minor, so as to ascertain for certain which form is found there; and all are very decided examples of *Aedon familiaris*. Besides this I may add that, according to Professor Newton, specimens in the Strickland Collection at Cambridge, obtained in the Morea, are also referable to *Aedon familiaris*, and not to *Aedon galactodes*. However, the present form was found by Canon Tristram in Palestine, where he says (*Ibis*, 1867, p. 80) that it alone, and not *Aedon familiaris*, occurs, and that "it is perhaps the most abundant species in summer. But it returns very late. On the 14th of April this species appeared in great numbers, and overspread every part of the country, wet or dry, where there were bushes or reeds. The return was simultaneous, and from that time its bright chestnut plumage, with its black-and-white-tipped tail expanded like a fan, enlivened every thicket and thorn-bush. In no way whatever does it resemble the Marsh-Warblers in action or note. Its song is low, soft, and mellifluous. It is constantly seen, and, instead of skulking in thickets, hops here and there, perching on the outmost bough of any bush or on the stem of a tall cane, expanding and jerking its tail like a Wren. It is curious that a bird which remains all the winter in the Sahara should be so late a migrant in the warm regions of the Holy Land. The species there is identical with that of South Europe and North Africa; and out of the innumerable birds we saw, of which we preserved over thirty specimens, I never met with an individual of *Aedon familiaris* (Ménétr.), said to be the common species in Asia Minor." There is some difficulty in defining the range of the present species and of *Aedon familiaris* in this part of the world; for they appear to meet here. In the Berlin Museum there are, amongst the specimens collected by Hemprich and Ehrenberg, two specimens from Beyrout of *Aedon familiaris*, all the others being *Aedon galactodes*; and I have one specimen of *Aedon familiaris* from Syria. As regards North-east Africa, Von Heuglin says that both forms occur; but all the African specimens I have examined are undoubtedly referable to the present species, and not to *Aedon familiaris*, though I find them subject to some variation in tone of colour.

Captain Shelley (B. of Egypt, p. 85) says that it arrives in Egypt towards the end of March, and leaves again in September; Finsch and Hartlaub (Vög. Ost-Afr. p. 249) give its range in East Africa as Egypt, Nubia, Sennaar, Kordofan, Abyssinia, the Abyssinian coastal districts, Mokolla in Southern Arabia, and southward into the Somali country; and Mr. Blanford (Geol. and Zool. of Abyss. p. 380) speaks of it as being "common in Abyssinia from the base of the hills to about 3500 or 4000 feet, but not seen above. In the winter (January and February) it was only seen at the base of the ranges; in May it was common as high as Mayen, about 3500 feet. It appears to be confined to the tropical region." In North-western Africa it is common in Algeria; Von Heuglin (Orn. N.O.-Afr. p. 279) says that he examined a specimen said to have come from the Gold Coast; and Mr. Gould has figured and described a specimen from Tripoli. It breeds in Algeria; and some notes on its habits as observed there by Mr. O. Salvin are given below.

Though at first classed with the aquatic Warblers, the present species is clearly distinct from that group, especially in its habits; for, instead of frequenting moist and damp localities, it is more frequently met with in arid sandy districts and amongst the vineyards on the hill-sides. Brehm remarks that it appears to frequent the dry desert localities where the common Nightingale is wanting, and appears to prefer the hill-sides to the flat level country. It appears to be much more of a ground-bird than almost any of the Warblers, and is usually seen either on the ground or perching only a few feet above the ground; and it is most frequently found searching for food at the foot of a bush or tree. Mr. O. Salvin, in his notes on the ornithology of the Eastern Atlas, writes (*Ibis*, 1859, p. 309) as follows:—"The head quarters of this bird seem situated in the salt-lake districts, where we found it abundantly through the months of May and June. It does not appear that marshy ground is an indispensable requisite for their haunts; for I observed it not unfrequently in the arid district of Guerah el Tharf. In the map this lake looks like a magnificent piece of water; but it is in reality what most of the places similarly laid down are, viz. a wide expanse of sand covered with saline incrustations, which only in peculiarly wet seasons is flooded with water. There nearly always exists in most of these sandy plains a great amount of evaporation, which, with the white saline matter on the surface, at a distance of a few miles gives all the appearance of a turbulent lake. Indeed, so perfect is the deception, that on arriving at Aïn Beïda we supposed that, when looking on Guerah el Tharf, we had in view a magnificent lake; and so we continued to believe it, till a morning's ride destroyed the illusion. Subsequently I saw many other instances of mirage, in some of which the hills, clouds, and all the surrounding objects were perfectly reflected. Near Aïn Djendeli I used frequently to notice the present species about the trees that overhang the dry stony water-courses that run from the hills into the plains beneath. We never found a nest, however, in one of the above-mentioned places; and it would seem that the bird prefers a moister soil for its breeding-haunts, such as is afforded by the lowlands near Lake Djendeli, where the tamarisk-trees grow on the banks of the Chemora and the small Aïn or spring. The nest we found usually placed conspicuously in the fork or on a branch of one of these trees, and with apparently no attempt at concealment. The heights at which the structure is placed vary from one to six feet from the ground. In one instance I found a nest among the roots of a tree in a bank-side, in a place where one would have expected in England to have found the nest of a Robin. The materials employed are the dead shoots of the tamarisk, which form the outside,

the inside and lining being usually Coot's or Duck's feathers, mingled with wool or camel's hair; and in nine cases out of ten, a small piece of serpent's skin is loosely placed in the bottom of the nest. I have since observed other instances of serpent's skin similarly used. As to what object the bird has in view in employing such material, I can form no conjecture.

"The number of eggs varies from three to five. They are laid about the third week in May.

"In its habits the bird is shy, and is careful to elude observation. When it alights on a twig, it expands its tail, and shows the peculiar markings which terminate each feather. While holding it thus extended, it raises it once or twice, somewhat after the manner of *Copsychus macrurus*. I may here remark that the eggs of *Aëdon galactodes* are not to be distinguished from those of *Anthus rufescens*, a bird equally or perhaps more common in the same districts in the Atlas; so that eggs ascribed to this species from that country, without undeniable proof that they are what they profess to be, can only be received with great doubt, and are in fact valueless to a collection. Among the Arabs of Djendeli this bird is known as 'el Hamara' (the red bird)."

Dr. von Heuglin says (Ibis, 1869, p. 85) that "in North-east Africa it lives in gardens, reed-thickets, cotton-fields, mimosa-woods, hedges and ditches, and usually shows less preference than the Nightingale for very shady and dense underwood; it also differs from the Nightingale by its song and call-note and in its general behaviour. It pleases rather by its rather shy and yet lively nature, which somewhat reminds one of that of a Thrush. It often flutters quickly from twig to twig, up to the very top of a tree, constantly moving, spreading, and closing its tail; soon it is seen running about briskly upon the bare ground, or under the bushes and dry grass, hunting for worms and caterpillars; suddenly it emits a Thrush-like cry of fear and flies noisily into the bushes. The birds of each pair keep together; the breeding-business begins as early as the end of April. As to its nesting-place, the bird is not particular; and we found the nest in pomegranate-, cotton-, and tamarisk-bushes, upon low mimosa-trees half-concealed in grass, and in thin hedges, in gardens, and the immediate vicinity of buildings and the busy noise of men, as well as in deserted, solitary places, or in quiet mimosa-groves. It resembles that of the Blackcap, consists of fine grass, rootlets, horsehair, wool, and so forth; occasionally, but rarely, small twigs are interwoven in it. The structure is slight and not very thick or artificial. The bird does not appear to lay more than four eggs; and I believe that it usually makes two nests, even when the first is not disturbed."

I quote above Mr. Salvin's description of the nest of the present species, so need add no further details, except to remark that Canon Tristram observes that in Palestine, as in Algeria, all the nests had a piece of serpent's skin in the interior. Eggs of the Rufous Warbler in my collection from Spain are delicate french-white, or white with a faint blue-green tinge in colour, marked with faint greyish brown underlying shell-spots, and dark brown overlying surface-markings, these being tolerably scattered over the surface of the shell, and, as a rule, rather small. In size these eggs average $\frac{3.5}{4.0}$ by $\frac{2.6}{4.0}$ inch, and in general character and colour so closely resemble the eggs of *Anthus campestris* that it is impossible to separate them if mixed up together. Canon Tristram says (*l. c.*) that "eggs of this species from Palestine are very much more delicately and sparsely spotted than those of Africa, and, arranged together with them, would at first sight be pronounced to be distinct. Yet we took perhaps twenty nests in each country, all of them indisputably identified, and the distinction holds uniformly true." This is

also the case with two eggs I possess, collected by Canon Tristram in Palestine; and I further observe that they are smaller than my Spanish specimens, measuring only $\frac{6.9}{80}$ by $\frac{5.0}{80}$ inch.

The specimen figured, on the same Plate with *Aedon familiaris*, is an adult male from Egypt, in my own collection.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a. Southern Spain (*Irby*). *b*, ♂. Kulat el Shukif, May 30th, 1864 (*Tristram*). *c*, ♂. Plain of Acre, April 22nd, 1864 (*Tristram*). *d*, ♂. Egypt (*Rogers*). *e*, ♂. Ghizeh, April 12th, 1864 (*S. S. Allen*). *f*, ♀. Cairo, April 19th, 1864 (*S. S. Allen*). *g*, ♂. Egypt, April 1st, 1868 (*Shelley*). *h*, ♂. Bejook, Abyssinia, August 18th, 1868 (*Jesse*).

E Mus. G. E. Shelley.

a, ♀. Nubia, April 10th, 1870 (*Shelley*). *b*, ♀. Egypt, March 31st, 1868 (*Shelley*). *c*, ♂. Egypt, March 29th, 1870 (*Shelley*). *d*, ♀. Nubia, April 7th, 1870 (*Shelley*). *e, f*. Abyssinia, 1871 (*Esler*).

E Mus. H. B. Tristram.

a. Algeria, May 23rd, 1856. *b*, ♂. Algeria. *c*, ♀. Jericho, April 14th, 1864. *d*, ♂. Genezareth, April 28th, 1864 (*H. B. T.*).

E Mus. Berol.

a. Syria. *b, c, d, e*. Egypt. *f, g, h*. Abyssinia (*Hempr. and Ehr.*).

E Mus. Salvin and Godman.

a, ♂. Jericho, April 13th, 1864 (*Tristram*). *b*, ♀. Genezareth, May 24th, 1864 (*Tristram*). *c*, ♀, *d*, ♀. Algeria, May 19th, 1857 (*O. Salvin*).

AEDON FAMILIARIS.

(GREY-BACKED WARBLER.)

- Curruca galactodes*, var. *syriaca*, Ehr. Symb. Phys. *Aves*, fol. 66 (1829).
Sylvia familiaris, Ménétr. Cat. Rais. p. 32 (1832).
Erythropgyia familiaris (Ménétr.), Bp. Comp. List, p. 12. no. 86 (1838).
Salicaria familiaris (Ménétr.), Schlegel, Rev. Crit. pp. xxxix et 58 (1844).
Salicaria galactodes, Von der Mühle, Beitr. Orn. Griechenl. p. 66 (1844, nec Temm.).
Ædon familiaris (Ménétr.), Bp. Consp. Gen. Av. i. p. 286 (1850).
Ædon bruchii, L. Brehm, J. f. O. 1856, p. 442.
Ædon bruchii brachyrhynchos, L. Brehm, ut suprâ.
Ædon bruchii macrorhynchos, L. Brehm, ut suprâ.
Calamoherpe familiaris (Ménétr.), Schlegel, Vog. Nederl. p. 141 (1858).
Salicaria galactodes, Lindermayer, Vög. Griechenl. p. 93 (1860, nec Temm.).

Figura unica.

Naumann, Vög. Deutschl. taf. 367. fig. 1.

♂ *ad.* *A. galactodi* similis, sed corpore suprâ brunnescente vix griseo adumbrato nec rufescente, uropygio et supracaudalibus rufescentibus, rectricibus duabus centralibus saturatè brunneis, remigibus albicante cervino nec rufescente marginatis facile distinguendus.

♀ *mari* similis.

Adult Male (Karatau, Turkestan). Differs from *Aedon galactodes* in having the upper parts very much greyer, being greyish brown instead of rufous-brown; the rump and upper tail-coverts alone being rufous; quills margined with dull whitish buff, not pale rufous; central rectrices dark dull brown almost to the extreme base, and the white on the remaining rectrices covers a much smaller area than in *Aedon galactodes*. Total length about $6\frac{3}{4}$ inches, culmen 0.75, wing 3.4, tail 2.8, tarsus 1.0. Arrangement of primaries similar to *Aedon galactodes*, except that the second quill is only 0.1 less than the primary coverts, and 0.9 less than the second, and the second 0.05 less than the third.

Female. Similar to the male.

Obs. In the series of specimens I have before me I find that the central rectrices vary greatly in colour, some having those feathers plain dark brown, whereas in others one web only and the terminal portion, or the terminal two thirds, are brown, the remainder of the feathers being rufous. As a rule the first primary in *Aedon familiaris* is shorter than in *Aedon galactodes*, being only very slightly longer than the wing-coverts; and the second primary is a trifle longer in *Aedon familiaris* than in *Aedon galactodes*; but these differences, though constant, are, comparatively speaking, but slight. The dark coloration of the upper parts is also very constant, even in the young birds and nestlings. Taking the entire series, I find that the measurements of *Aedon familiaris* vary as follows—culmen 0.73–0.75,

wing 3·3–3·4, tail 2·75–2·85, tarsus 1·0–1·07; whereas those of *Aedon galactodes* are—culmen 0·74–0·8, wing 3·3–3·5, tail 3·0–3·15, tarsus 1·0–1·1.

The plate of Naumann's, to which I refer above, is not a very good representation of *Aedon familiaris*, as the dark colour of the central rectrices is not shown, and the colour of the upper parts is not sufficiently dark or grey.

THIS, the eastern form of the Rufous Warbler, differing in the darker and greyer colour of the upper parts and in the dark coloration of the central rectrices, is found in South-eastern Europe, ranging eastward to Rajpootana. It has also been met with as a straggler as far north as Heligoland, where, according to Professor Blasius (*Ibis*, 1862, p. 66), this form, and not *Aedon galactodes*, has occurred. He states (*l. c.*) that it is "said to have been formerly frequently seen in Heligoland. I was told by Gaetke that the only individuals of this species killed in Heligoland known to him were in the collection of the apothecary Mecklenburg, at Flensburg. I went there in order to ascertain which of the two species, the Spanish-African *Aedon galactodes* (Temm.) or the Græco-Asiatic *Aedon familiaris* (Ménétr.), migrated into Heligoland. Undoubtedly it was the latter." In Western Europe the present species is replaced by *Aedon galactodes*; but it is tolerably common in Greece, from which country I have several specimens collected by Dr. Krüper and Mr. H. Seebohm. Count von der Mühle, who records the present species from Greece under the name of *Salicaria galactodes*, says (*Beitr. Orn. Griechenl.* p. 66) that it arrives in Greece about the middle of April, the male birds always appearing first, and leaves again late in August; and Lindermayer (*Vög. Griechenl.* p. 94) writes that it arrives in Rumelia between the 27th April and the 3rd May, and is found more especially in the province of Attica; about eight or ten days previous to this it may be seen on the coasts of the Peloponnesus and the islands of the Archipelago, and it breeds throughout Rumelia in the plains near the coast. Lord Lilford (*Ibis*, 1860, p. 230), doubtless referring to the present species, says, "I twice observed this species:—once in the island of Corfu, on which occasion a friend killed a fine specimen; and a few weeks afterwards near Kataito, in Epirus, where I watched a pair for some time, but refrained from shooting them, as my gun was loaded with large shot." It is not referred to by Von Nordmann as occurring in Southern Russia; but probably it is found on the coasts of the Black Sea; and it was first described from the Caucasus by Ménétries, who met with it near Saliane in May. In Asia Minor it is common; and Dr. Krüper says (*J. f. O.* 1869, p. 38) that it is found numerously in the plains near Smyrna as far as the lower mountains, and is one of the latest to arrive in the spring. In 1868 he saw the first on the 7th May, and in 1869 on the 3rd May; but by about the 12th of that month all appeared to have arrived, and at once commenced nidification. M. Verreaux sent me an example said to be from Syria; and I examined two specimens in the Berlin Museum from Beyrout, collected by Hemprich and Ehrenberg. I have never seen a specimen of the present species from North Africa, and am inclined to believe that only *Aedon galactodes* occurs there.

To the eastward *Aedon familiaris* occurs in Persia, where it is, according to Mr. Blanford, tolerably common; and Mr. A. O. Hume (*Ibis*, 1869, p. 355) obtained specimens from Jodhpoor, in Western Rajpootana, through Dr. King. Severtzoff, who met with it in Turkestan, says (*Turk. Jevotnie*, p. 65) that he met with it breeding throughout the entire western portion of that country, the western Thian Shan, and the Karatau Mountains, along the rivers Aris, Kalles,

Chirchik, Syr Darja, in the Zarevshan valley, and near Lake Aral. It breeds to an altitude of about 1000 feet; but above this, where the grass steppes commence, he did not observe it, though he found it again in the apple- and ash-tree districts.

In its habits, note, and mode of nidification the present species closely resembles *Aedon galactodes*. Lindermayer (*l. c.*) says that it frequents vineyards and olive-groves, and is frequently seen on the roads near these, and he usually found it on the ground. It frequently perches on the vine-poles or on the lower branches of the olive-trees, and from here drops on to the ground to pick up a worm, beetle, or a grasshopper, as it feeds entirely on insects; and every now and then it utters a note, *tack, tack*. Von der Mühle describes its song as being somewhat like that of the Garden-Warblers, but monotonous; and it is often uttered whilst the bird is on the ground. When hopping about amongst the branches or on the ground it frequently spreads its tail, showing the rich markings on it to the fullest advantage. Its nest resembles that of the Rufous Warbler, and, like that species, it almost invariably places a piece of serpent's skin in the interior. Lindermayer says that the nest is placed in the large branches of an olive-tree near the trunk, or occasionally in the mud walls overgrown with creepers; and he describes the nest as being loosely and carelessly made of soft plant-stems, and lined with cotton, wool, or feathers. Dr. Krüper writes that the nest is large and bulky for the size of the bird, and is so placed that it is easy to find; it is usually built only a few feet above the ground, in the vineyard-hedges, or is occasionally placed on the ground itself. During the day-time, he says, the female incubates but little, especially if the eggs are fresh. He found the first eggs in 1868 on the 28th May, and in 1869 on the 24th May, and believes that it only breeds once in the season. The usual number of eggs is five; but old females occasionally lay as many as six.

I have eggs of the present species collected by Dr. Krüper which agree closely with those of the Rufous Warbler collected by Canon Tristram in Palestine both in colour and size; but one is much paler than any of the eggs I have seen of that species. Dr. Krüper remarks that the eggs of this species are subject to great variation in tone, colour, and markings.

The specimen figured, on the same Plate with *Aedon galactodes*, is an adult bird from Karatau, in Turkestan, and is in my own collection.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a, ♀, *b*, ♀, *c*, *juv.* Attica, Greece, July 1867. *d*, ♂. Smyrna, Asia Minor, May 1864. *e*, ♂. Smyrna, June 1871. *f*, ♂. Smyrna, July 1863. *g*, *juv.*, *h*, ♀, *i*, *juv.* Smyrna, July 1871 (*Krüper*). *k*. Syria. *l*, ♀. Karatau, Turkestan, May 17th, 1866 (*Severtzoff*).

E Mus. Berol.

a, *b*. Beyrout (*Hemprich & Ehrenberg*).

E Mus. H. B. Tristram.

a, ♂. Smyrna, June 26th, 1871 (*Dr. Krüper*).

E Mus. H. Seebohm.

a, *b*, ♂. Itea, Greece, May 20th, 1873 (*H. S.*).

Genus ACROCEPHALUS.

- Turdus* apud Brisson, Orn. ii. p. 219 (1760).
Ficedula apud Brisson, Orn. iii. p. 379 (1760).
Turdus apud Linnæus, Syst. Nat. i. p. 296 (1766).
Motacilla apud Linnæus, Syst. Nat. i. p. 329 (1766).
Sylvia apud Scopoli, Ann. I. Hist. Nat. p. 158 (1769).
Acrocephalus, J. A. Naumann, Naturg. Land- u. Wass.-Vög. Nachtr. Heft iv. p. 201 (1811).
Muscipeta apud Koch, Baier. Zool. i. p. 166. (1816).
Calamoherbe apud Boie, Isis, 1822, p. 502.
Calamodyta apud Meyer, Taschenb. deutsch. Vogelk. Zus. u. Bericht. p. 253 (1822).
Calamodus apud Kaup, Natürl. Syst. p. 117 (1829).
Curruca apud Ehrenberg, Symb. Phys. fol. 66 (1829).
Arundinaceus apud Lesson, Traité d'Orn. p. 419 (1831).
Agrobates apud Jerdon, Madr. Journ. x. p. 269 (1839).
Malacocercus apud Hodgson, in Gray's Zool. Misc. p. 83 (1844).
Salicaria apud Selby, Brit. Orn. i. p. 201 (1833).
Caricicola apud C. L. Brehm, Vogelfang, p. 236 (1855).

THE present group of Warblers, commonly called Aquatic Warblers, differ from the allied genera chiefly in their aquatic habits; and, as a rule, they appear to have a longer tarsus, more concave wings, and larger claws than most of the other Warblers. The range of this genus is tolerably wide, as the species belonging to it are found throughout the Palæarctic, Ethiopian, and Oriental Regions. In the Western Palæarctic Region eight species are found, all of which are regular summer residents, some being met with within this region throughout the year. They are assiduous and good songsters; and their song may be heard late into the night. They feed almost entirely on insects of various kinds, which they obtain amongst the aquatic herbage. They frequent damp and moist localities, usually marshes or sheets of water overgrown with dense reeds or rushes. Their flight is somewhat feeble; and they propel themselves with short jerky flaps of the wings.

They build a deep cup-shaped nest, either on the ground or above the water, interwoven and firmly attached to the stems of aquatic plants, or else on a bush near the water; and they deposit from four to six eggs, which, on a greyish or greenish-grey ground, are more or less richly blotched and marked with dark colour.

Acrocephalus arundinaceus, the type of the present species, has the beak rather broad at the base, the culmen elevated, slightly notched at the tip; nostrils basal, oblique, oval, exposed; gape furnished with tolerably large bristles; wings rather short, first quill rather abortive, second and third longest, and about equal; tail rounded, and rather long; legs long; feet large and strong, tarsi covered in front with five plates and three inferior scutellæ; tail rather long and rounded, under tail-coverts rather short.



J. G. Keulemans lith.

M. & N. Hanhart imp.

1. PADDY-FIELD WARBLER.

ACROCEPHALUS AGRICOLUS

2. BLYTH'S REED WARBLER.

ACROCEPHALUS DUMETORUM

ACROCEPHALUS AGRICOLUS.

(PADDY-FIELD WARBLER.)

- Sylvia (Acrocephalus) agricola*, Jerdon, Madr. Journ. xiii. pt. 2, p. 131 (1844).
Calamoherpe agricola (Jerd.), Blyth, J. As. Soc. Beng. xiv. p. 595 (1845).
Acrocephalus agricola (Jerd.), Blyth, Cat. B. Mus. A. Soc. Beng. p. 182 (1849).
Calamodyta agricola (Jerd.), G. R. Gray, Gen. of B. i. p. 172 (1849).
Salicaria capistrata, Severtzoff, Turk. Jevotnie, p. 127 (1873).

Figura nulla.

Ad. supra rufescenti-brunneus, capite saturatiore, uropygio clariore: alis et caudâ fuscis, plumis vix fulvido marginatis: capitis lateribus sordidè brunneis sed striâ superciliari albâ: corpore subtus albo, abdomine imo et hypochondriis cervino lavatis: rostro fusco, mandibulâ pallidiore: iride flavo-fuscâ: pedibus brunneis.

Adult in summer (Ekaterinburg, 12th July). Upper parts warm pale rufous brown, brightest on the rump; head darker and less rufous; wings and tail brown, with light fulvous-brown edges; sides of the head dull brown; but a light, almost white, streak passes over the eye; underparts white, tinged with warm buff on the flanks and lower abdomen; bill brown, paler beneath; iris yellowish brown; legs brown. Total length about 5 inches, culmen 0.45, wing 2.25, tail 2.2, tarsus 0.83; wing short and rounded, the secondaries only 0.45 shorter than the longest primary, first primary narrow and short, about 0.15 longer than the wing-coverts, second between the sixth and the seventh in length, third and fourth the longest, being nearly equal; tail much rounded.

Adult in spring (Etawah, India, 24th March). Resembles the specimen above described; but the plumage is fresher and brighter in tinge, and the underparts below the throat are tinged with ochreous buff.

NEARLY three years ago I received a small collection of birds made on the Ural, in European Russia, by Mr. Leonida Sabanäeff; and on examining and comparing the specimens I was pleased to find that it contained two examples which, though labelled *Iduna salicaria*, are undoubtedly referable to the present species, which until then had only been known as an Indian bird. I have since then tried to obtain information respecting its range in Russia, but have been unable to glean any thing reliable, as it has been confused with a perfectly distinct species, *Hypolais caligata*. The only two European examples I have examined were obtained near Ekaterinburg and at Sinara, the one on the 10th and the other on the 12th July; so that it doubtless breeds within the limits of the Western Palæarctic Region. It is found in Turkestan and on the eastern shores of the Caspian; for Dr. Severtzoff informs me that the species described by him (*l. c.*) under the name of *Salicaria capistrata* is undoubtedly identical with *Acrocephalus agricola*. It was not met with in Persia by Mr. Blanford and Major St. John; but Mr. A. O. Hume records it from Sindh, where, however, he only observed a few examples. Dr. Jerdon writes (B. of India, ii. p. 156) that he “first found this species in growing paddy-fields in Nellore in the cold weather.

and in reedy ground near tanks in Central India. It is found also in the vicinity of Calcutta, and in various parts of India to Nepal and Afghanistan. Like the others it feeds entirely on insects. It is migratory in India, going north to breed." Mr. W. E. Brooks obtained several specimens at Almorah in April and May; but it had then apparently not begun to breed.

The eggs of the present species are quite unknown; and the only information I find on record respecting its nidification is the following from the pen of Mr. W. E. Brooks, C.E., who writes (*Journ. As. Soc. Beng.* xli. pt. 2, p. 77) as follows:—"Near Shupyion (in Cashmere) I found a finished empty nest of this truly aquatic Warbler in a rose-bush which was intergrown with rank nettles. This was on the road-side, where there was a shallow stream of beautifully clear water. On either side of the road were vast tracts of paddy-swamps, in which the natives were busily engaged planting the young rice-plants. The nest strongly resembles that of *Curruca garrula*. The male with his throat puffed out was singing on the bush, a loud vigorous pretty song like a Lesser Whitethroat's, but more varied. I shot the strange songster, on which the female flew from the nest. This was the only pair of these interesting birds that I met with. I think, therefore, that their breeding in Cashmere is not a common occurrence."

The specimen figured (on the same Plate with *Acrocephalus dumetorum*, for comparison) is one in fresh spring plumage, from India. I have not figured a summer-plumage European-killed specimen, because the plumage becomes much faded and worn in the summer season, when it is met with in Europe.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a, ♀ *ad.* Ekaterinburg, Ural, July 12th, 1872. *b*. Sinara, in the Ural, July 10th, 1872 (*L. Sabanäeff*). *c*, ♀. Etawah, N.W. P. India, March 24th, 1870 (*W. E. Brooks*).

E Mus. Lord Walden.

a, ♀. India, February 25th, 1870. *b*. Rognathpore, February 1864 (*Beavan*). *c*. Sylhet (*Godwin-Austen*).

ACROCEPHALUS DUMETORUM.

(BLYTH'S REED-WARBLER.)

Sylvia montana, Sykes, P. Z. S. 1832, p. 89 (nec Horsf.).*Acrocephalus montanus*, Blyth, J. As. Soc. Beng. xiv. p. 594 (1845, nec Horsf.).*Sylvia arundinacea*, Eversm. Add. Pall. Zoogr. Rosso-Asiat. fasc. iii. p. 11 (1842, nec auctt.).*Acrocephalus dumetorum*, Blyth, J. As. Soc. Beng. xviii. p. 815 (1849).*Sylvia (Salicaria) magnirostris*, Lilljeb. Öfv. K. Vet. Ak. Handl. 1850, p. 274, pl. xix.*Calamoherpe magnirostris* (Lilljeb.), Meves, Öfv. K. Vet. Ak. Förh. 1871, p. 752.*Salicaria palustris*?, Severtzoff, Turk. Jevotnie, pp. 66 & 127 (1873).*Calamodyta dumetorum* (Blyth), Meves, J. für Orn. 1875, p. 431.

Ad. corpore suprâ sordidè et pallidè olivaceo-fusco nec rufescente ut in *Acrocephalo agricolò*, uropygio magis olivaceo: alis et caudâ saturatè fuscis, pallidè olivaceo-fuscò marginatis: capitis lateribus pallidè olivaceo-fuscis vix griseo tinctis, striâ superciliari sordidè albâ: corpore subtùs albo, pectore, hypochondriis et crisso vix flavido-cervino tinctis: rostro brunneo, mandibulâ flavicante: iride fuscâ: pedibus pallidè fuscis.

Adult Male in summer (S.E. Ural, 6th July). Entire upper parts dull light olivaceous brown, not rufous brown as in *Acrocephalus agricolus*; rump rather more olivaceous in tinge than the rest of the upper parts; wings and tail dark brown, margined with pale olivaceous brown; sides of the head pale olivaceous brown with a greyish tinge; a dull white streak passes from the nostril above the eye; underparts white, tinged with yellowish buff on the breast, flanks, and crissum; bill brown above, yellowish below; iris brown; legs pale brown. Total length about 5·5 inches, culmen 0·6, gape 0·72, wing 2·4, tail 2·2, tarsus 0·9; wing rounded, the secondaries about 0·4 shorter than the longest primary, first primary narrow and small, about equal in length to the coverts; second quill 0·2 shorter than the third, and about equal to the seventh, the third and fourth the longest, being nearly equal; tail moderately rounded.

Adult in spring (India). Differs from the bird above described in being darker and brighter-coloured above, and in having the underparts tinged with yellowish buff.

It is only, comparatively speaking, quite lately that this well-known Indian species has been ascertained to inhabit Europe; for until Mr. Blanford and myself, when in Berlin in 1873, compared examples from Russia and India, and ascertained that *Salicaria magnirostris* of Lilljeborg is specifically identical with the present species, it was supposed that the bird described by Lilljeborg was really distinct. It was first discovered in Northern Russia, close to Konevskaja, not very far from Kargopol, by Professor Lilljeborg in the summer of 1848; but as this gentleman did not publish his description previous to 1850, Blyth's name takes precedence.

Professor Lilljeborg only obtained one example on the above-mentioned occasion, from which

his description was taken ; and since then I do not find that it has been obtained in that particular locality. Mr. Meves when travelling over the same ground in 1869 did not obtain this species ; but he says that when travelling on the canal between Novaja Ladoga and Sermaks he heard what he is sure was this bird singing on several occasions. "Our boat," he writes, "stopped for several hours at the Waronoff station, about forty versts from Novaja Ladoga, on the evening of the 11th June. The birds were in an inaccessible marshy place, covered with willow bushes, close to the canal ; and in spite of every attempt I could not get near enough to see and secure a specimen. The song, which is said to be finer than that of the Northern Nightingale, was rich and somewhat peculiar, but reminded me more of that of *Acrocephalus palustris* and *Hypolais icterina*, than the song of the Nightingale." When in St. Petersburg he found four examples in the Museum of that city. One, a male, was from near St. Petersburg, obtained by Dr. Heffner in 1852 ; and on the label was written in Russian, "This bird frequented the gardens, and had a richer song than the Nightingale." The second specimen was shot at Spask, in the Ural, on the 23rd June, 1842, by Dr. Eversmann, and was labelled by him "*Sylvia arundinacea*;" the third was labelled as having been obtained at Semipaltansk, in April 1843 ; and the fourth was purchased in the St.-Petersburg market. On a second journey through a portion of Russia Mr. Meves met with the present species near Moscow, and commonly in the Ural, whence he brought back many specimens ; but he has not published any notes on its habits, nor did he succeed in finding its nest. Beyond the above I find no information on record respecting its occurrence in Europe ; but I agree with Mr. Meves in thinking it probable that it may range as far north as Archangel. Mr. Sabanäeff met with the present species in Turkestan, but gives no particulars of its range : doubtless it passes there during migration to and from its breeding-haunts ; or it may possibly remain in some parts of that country to breed. In India, according to Dr. Jerdon (B. of India, ii. p. 156), it is "found in bushy and grassy ground on the Neilgherries and west coast, also more rarely in the Carnatic, in Central India, and in Bengal to Nepal and Assam. Blyth says that it is not met with in the wilder marshy district about Calcutta, but chiefly in gardens. It is migratory in the plains, but breeds in some parts of the Himalayas." Captain E. A. Butler writes (Stray Feathers, iii. p. 479) as follows :—"It is not uncommon at Mount Aboo, but I have not met with it in the plains. It frequents tall trees (willow principally) overhanging water, or wet or dry nullahs, though by no means strictly aquatic in its habits, as I have often met with it in high trees, at a considerable distance from any water. I have shot specimens near Deesa in low bush jungle. It arrives about the 10th or 12th of September, and is not uncommon." To this Mr. Hume adds that it has not as yet been met with in Sindh, Cutch, or Jodhpoor, except on the extreme east at Sambhur ; but Captain Hayes Lloyd found it very common during the cold season at Kattiawar. To the southward this species has also been observed as far as Ceylon.

In its general appearance the present species reminds one of some of the *Hypolais* group as well as of *Acrocephalus* ; and, curiously enough, its eggs approach in appearance more those of the former than the eggs of the latter group : indeed it seems to me that it constitutes a link between *Hypolais* and *Acrocephalus*, being most nearly allied to *Acrocephalus palustris* in the latter, and to *Hypolais rama* in the former group. But in the construction of its nest it

differs, so far as I know, from all members of both these groups; for it builds a spherical nest (of grass) having a lateral entrance, and not an open cup-shaped nest. Hutton was the first to describe its nest and eggs. He writes respecting its habits and nidification as follows:—"This species arrives on the hills, up to 7000 feet at least, in April, when it is very common, and appears in pairs, with something of the manners of *Phylloscopus*. The note is a sharp *tchik*, *tchik*, resembling the sound emitted by a flint and steel. It disappears by the end of May, in which month they breed; but, owing to the high winds and strong weather experienced in that month in 1848, many nests were left incomplete, and the birds must have departed without breeding. One nest which I took, on the 6th May, was a round ball with a lateral entrance; it was placed in a thick barberry bush growing at the side of a deep and sheltered ditch; it was composed of coarse dry grasses externally, and lined with finer grass. Eggs three, and pearl-white, with minute scattered specks of rufous, chiefly at the larger end, diameter $\frac{1.0}{16}$ by $\frac{.8}{16}$ inch."

Mr. Andrew Anderson has lately published (*Stray Feathers*, iii. p. 351) some most interesting notes on the nidification of this bird, which I transcribe as follows:—"On the fifth day after leaving Naini Tal—ever mindful of my friend Mr. Brook's parting advice to me (in reference to the part of the country which required to be investigated), 'avoid the lower hills as the plague'—I reached Takula, which is the first march beyond Almora, on the road to the Pindari glacier, late on the evening of the 10th of May. It rained heavily all that night, so that I was obliged to halt the next day, my tents being far too wet to be struck, and the distance to the next halting-place necessitating a start the first thing in the morning.

"Takula is at an elevation of between 5000 and 6000 feet; it is beautifully wooded, with a small mountain-stream flowing right under the camping-ground; and the climate is delightful. All things considered, I was not sorry at having an opportunity of exploring such productive-looking ground; and before it was fairly daylight the next morning operations were commenced in right earnest. To each of my collectors I apportioned off a well-wooded mountain-slope, reserving for my own hunting-ground (as I had not got my hill legs) the watercourses and ravines in immediate vicinity of the camp.

"Not more than 20 yards from where my tent stood there is a deep ravine clothed on both banks with a dense jungle of the larger kind of nettle *Girardinia heterophylla* (such nettles too!), the hill-dock (*Rumex nepalensis*), and wild rose-trees. Wending my way through this dark, damp, and muggy nullah to the best of my ability, I came upon the nest of this interesting little bird. It was placed in the centre of a rose-bush, at an elevation of some 2 feet above the bank, and about 4 feet from where I stood, but yet in a most tantalizing situation, inasmuch as it was necessary to remove several thorny branches before an examination of the nest was possible. The act of cutting away the branches alarmed my sombre little friend (I knew that the nest was tenanted, as the bill and head were distinctly visible through the lateral entrance); and out she started with such a 'whir' that any thing like satisfactory identification for a bird of this sort was utterly hopeless. The nest contained four beautiful little eggs, so that to bag the parent bird was a matter of the first importance; all my attempts, however, first to capture her on the nest, and next to shoot her as she flew off, were equally futile, her movements being rapid and erratic as forked lightning. And here let me give a word of advice to my brother ornithologists.

Never attempt to shoot a wary little bird in the act of leaving its nest, as you only run the risk, and mortification I may add, of wounding perhaps an unknown bird, in which case she will never again return to her nest; but lie in ambush for her with outlying scouts, and make certain of her as she is returning to her nest. She will first alight on a neighbouring tree, then on one closer, coming nearer and nearer each time; finally she will perch on the very tree or bush in which the nest is built, and while taking a look round to see if all is well before making a final ascent, you have yourself to blame if you fail to bag her. All this sounds very cruel; but if a bird must be shot for scientific purposes it is surely preferable to kill it outright, than to let it die a lingering death. Thus it was that I eventually succeeded, even at the expense of being devoured alive by midges and mosquitoes; but then, was not the satisfaction of knowing that I had become the happy possessor of authentic eggs of '*Acrocephalus dumetorum*' in itself sufficient to repay me for my hill excursion?

"I cannot, however, pretend to lay claim to originality in the discovery of the breeding-habits of this bird; for Hutton's description of the nest and eggs taken by him so fully accords with my own experience, that it is but fair to conclude he was correct in his identification. I would add, however, that the nest above alluded to was more elliptical than spherical, being about the size and shape of an Ostrich's egg, that it was constructed throughout of the largest and coarsest blades of various kinds of dry grass (the egg-cavity being lined with grass bents of a finer quality), and that it was domed over, having a lateral entrance about the middle of the nest. The whole structure was so loosely put together as to fall to pieces immediately it was removed.

"The eggs, four in number, are pure white, beautifully glossed, and well covered with rufous or reddish brown specks, most numerous at the obtuse end. Owing to its similarity to a number of eggs, particularly to the Titmouse group, it is just one of those that I would never feel comfortable in accepting on trust.

"It was a remarkable coincidence that the very day I took this nest my post brought me part iv. of the P. Z. S. for 1874, containing Mr. Dresser's interesting paper on the nidification of the '*Hypolais*' and '*Acrocephalus*' groups; and if I understand him rightly, he is certainly correct in his surmise as to the eggs of '*Acrocephalus dumetorum*' approaching those of the '*Hypolais*' group.

"My good luck, as regards the Lesser Reed-Warbler, did not end here; for on the following day, at Bagesur, at an elevation of only 3000 feet, I again encountered a pair of these birds, finding their nest on the banks of the Purjoo. The position, shape, and architecture of this nest was identical with the one I have above described; but the eggs unfortunately had not been laid. The little birds on this occasion were quite fearless, hopping from stem to stem of the dense undergrowth which throughout the Bagesur valley fringes both sides of the river, every now and again making a temporary halt for the purpose of picking insects off the leaves, with an occasional '*tchick*,' which Hutton compares to the 'sound emitted by a flint and steel,' but all the time enticing me away from the site of their dwelling-place. In this way they led me a wild-goose chase several times up and down the river-bank before I was able to discover the whereabouts of their nest."

Just as the present article was going to press I received, through the courtesy of Dr. Sundström, of Stockholm, a transcript of Professor Lilljeborg's notes respecting this species. The Professor compares this Warbler, as regards habits, to *Acrocephalus palustris*, and adds that its song is exceedingly rich and varied, and reminded him much of that of the common Song-Thrush.

The specimen figured (on the same Plate with *Acrocephatus agricolus*) is the one above described, and is in my collection.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

- a.* Ekaterinburg, Ural, August. *b.* Ekaterinburg, July 10th, 1872 (*Sabanäeff*). *c.* ♂ *ad.* Nikolskoj, S.E. Ural, July 6th, 1872 (*Meves*). *d.* *pull.* Nikolskoj, July 7th, 1872 (*Meves*). *e.* ♀. Ahmenuggur, India, April 27th, 1869 (*H. J. Bruce*). *f.* Etawah, N.W. P. India (*W. E. Brooks*).

E Mus. Lord Walden.

- a.* ♂. Barrackpore, India, November 21st, 1864 (*Beavan*). *b.* ♂. Maunbhoom, January 1865 (*Beavan*). *c.* Maunbhoom, March 1864. *d.* Maunbhoom, December 1864 (*Beavan*). *e.* Assam. *f.* Ghagra, December 1869. *g.* Bengal.



J. N. Hanhart. mp

1. REED WARBLER
ACROCEPHALUS STREPERUS
2. MARSH WARBLER.
ACROCEPHALUS PALUSTRIS

ACROCEPHALUS STREPERUS.

(REED-WARBLE.)

- Ficedula curruca arundinacea*, Brisson, Orn. iii. p. 379 (1760).
Motacilla arundinacea, Lightfoot, Phil. Trans. lxxv. p. 11 (1785, nec Linn.).
Fauvette des roseaux, Buff. Hist. Nat. Ois. v. p. 142 (1788).
Sylvia arundinacea, Lath. Ind. Orn. ii. 510 (1790, nec Linn.).
Acrocephalus arundinaceus, J. A. Naumann, Naturg. Land- und Wasser-Vög. Nachtr. Heft iv. p. 202 (1811, nec Linn.).
Muscipeta arundinacea, Koch, Baier. Zool. i. p. 165 (1816, nec Linn.).
Sylvia strepera, Vieill. Nouv. Dict. xi. p. 182 (1817).
Calamoherbe arundinacea, Boie, Isis, 1822, p. 972 (nec Linn.).
Calamodyta arundinacea, Meyer, Taschenb. deutsch. Vogelk. Zus. und Bericht. p. 253 (1822, nec Linn.).
Curruca fusca, Ehr. Symb. Phys. fol. cc (1829).
Calamoherbe alnorum, C. L. Brehm, Vög. Deutschl. p. 443 (1831).
Calamoherbe arbustorum, C. L. Brehm, op. cit. p. 443 (1831).
Calamoherbe piscinarum, C. L. Brehm, op. cit. p. 447 (1831).
Calamoherbe brehmii, Müller, fide C. L. Brehm, op. cit. p. 447 (1831).
Salicaria arundinacea, Selby, Brit. Orn. i. p. 203 (1833).
Calamodyta strepera (Vieill.), G. R. Gray, Gen. of B. i. p. 172 (1848).
Sylvia affinis, Hardy, Ann. de l'Assoc. Norm. 1841, fide Degland, Orn. Eur. i. p. 572 (1849).
Calamoherbe pinetorum, C. L. Brehm, Vogelfang, p. 235 (1855).
Calamoherbe hydrophilos, C. L. Brehm, ut suprâ (1855).
Calamoherbe orientalis, C. L. Brehm, ut suprâ (1855).
Calamoherbe crassirostris, C. L. Brehm, ut suprâ (1855).
Calamoherbe obsкуроcapilla, Dubois, Journ. für Orn. 1856, p. 240.

Rousserolle effarvatte, French; *Cannajola minore*, Italian; *Teich-Rohrsänger*, *Teichsänger*, German; *de kleine Karekiet*, Dutch; *Rörsanger*, Danish; *Rörsångare*, Swedish.

Figuræ notabiles.

Werner, Atlas, *Insectivores*, pl. 28; Kjerb. Orn. Dan. taf. 22 a; Fritsch, Vög. Eur. taf. 18. fig. 18; Naumann, Vög. Deutschl. taf. 81. fig. 2; Sundevall, Svensk. Fogl. pl. 14. fig. 6; Gould, B. of Eur. pl. 108; id. B. of G. Brit. ii. pl. 73; Schlegel, Vog. Nederl. pl. 77; Bettoni, Ucc. Lomb. pl. 10.

♂ *ad.* corpore suprâ pallidè rufescenti-brunneo, striâ superciliari pallidè flavo-cervinâ: remigibus et rectricibus saturatè fuscis, pallidè rufescente brunneo marginatis: corpore subtùs pallidè cervino, hypochon-

driis saturationibus: rostro fusco-corneo, ad basin flavicante: pedibus schistaceo-brunneis: remige secundo quartum æquante vel brevior.

♀ *ad.* mari similis sed paullo minor.

Adult Male (Piedmont, 10th May). Upper parts uniform pale brown with a rufous tinge; a line above the eye pale yellowish buff; quills and tail dark hair-brown edged with the same tinge of rufous brown as the back; underparts pale buff, darkest on the flanks; bill dark horn-colour, yellowish at the base; iris dark brown; legs slaty brown, soles yellowish. Total length about 5·5 inches, culmen 0·6, wing 2·55, tail 2·05, tarsus 0·9, second quill equal to or rather shorter than the fourth.

Adult Female. Resembles the male; but is a trifle less in size.

THE Reed-Warbler inhabits Europe as far north as Southern Scandinavia, being met with also during winter in Africa, and ranging into Asia as far east as Turkestan. In Great Britain it is not so generally distributed as the Sedge-Warbler, and is more numerous on the east than on the west side of our island. It is a summer visitant, arriving late in April and leaving us again for the south in September. Professor Newton says (Yarr. Brit. B. ed. 4, i. p. 370) that "it seems not to breed in Devon or Cornwall; in the last county, indeed, it is only known with certainty to have occurred as a straggler, and that but once, in the autumn of 1849, when several were taken in Scilly. According to the latest information collected and kindly furnished by Mr. More, it is doubtful whether the Reed-Warbler regularly extends further to the north-west than Staffordshire or Derbyshire, though it reaches Scarborough on the east." It is common in the fen-districts of Norfolk, but less numerous than the Sedge-Warbler, and far more local in its habits. Mr. Cordeaux, however, says (B. Humber Distr. p. 32), in the Humber district it is "extremely rare; I have only once seen it in this parish, and that in the autumn. Mr. Alington has never met with it in the neighbourhood of Croxby Lake, on the North Wolds; nor have I, although I yearly searched for it in many very likely localities for its occurrence in this neighbourhood. I have found it in the south of the county, near Boston, where it nests. It also nests annually, as Mr. Adrian informs me, near Lincoln." In Scotland it is extremely rare; and Mr. Robert Gray only introduces it in his work on the birds of the west of Scotland on the authority of Dr. Turnbull, who states that it occurs in East Lothian, and has been seen in the neighbourhood of Bathgate, in Mid Lothian, where it breeds; and Professor Newton says that Mr. Hepburn found it breeding in East Lothian, and Mr. Weir in West Lothian. In Ireland it is extremely rare. Mr. Thompson writes that he was informed by Mr. Templeton that he once saw it near Belfast, and by Mr. Montgomery that he shot a male specimen at Raheny, near Dublin, on the 21st of December, 1843.

It does not occur in Norway, but is found in Southern Sweden. Sundevall says that it has been met with in the large tracts covered with aquatic vegetation at Gothenburg, and at Landskrona, Näsbyholm, and several places in Southern and Western Skåne, and possibly it is found elsewhere in Sweden, but has been overlooked. It is not found in Finland; but it is by no means very rare, though local, in Russia. Mr. Sabanäeff informs me that it is common only in some portions of the Moscow and Jaroslaf Governments, and has been observed in the south-eastern portion of the Vologda Government. According to Eversmann and Bogdanoff it is very

common in Kazan and Simbirsk, and becomes more numerous towards the south of Russia. In the Ekaterinburg Ural Mr. Sabanäeff found it common along the rivers; but he does not believe that it ranges further north than $57\frac{1}{2}^{\circ}$ N. lat. It appears to be found throughout North Germany; but it is more numerous in the western than in the eastern portion; and Kjærbölling says that it is one of the commonest species and is found throughout Denmark in suitable localities. It arrives early in May, and leaves again late in August. In Belgium and Holland it is numerous during the breeding-season, arriving in the latter country, Professor Schlegel says, about the end of April and leaving late in September. Throughout France it is also very generally distributed in suitable localities. M. A. Lacroix says that it arrives in the Haute-Garonne about the 15th April, breeds throughout the French Pyrenees, and leaves early in September. It is, as elsewhere in Europe, a summer resident in Portugal and Spain, appearing near Gibraltar, Colonel Irby states, about the end of March, and breeding numerous early in May. He adds that he never met with it in the winter; but Mr. Howard Saunders states that he obtained it in Spain in "winter and spring," and that it breeds abundantly near Malaga and elsewhere in suitable localities. In Italy and Sicily it is common, and breeds in places where there is marsh and an abundance of aquatic vegetation; but it appears to be scarce in Sardinia, though Mr. A. B. Brooke says there are several specimens in the Cagliari Museum. Nor is it, Mr. C. A. Wright states, common in Malta, where it is usually seen in September and October. In some parts of Southern Germany it is very numerous, but not everywhere; for the late Mr. E. Seidensacher informed me that in Styria he only met with it occasionally during passage; but Dr. A. Fritsch writes (J. f. O. 1871, p. 195) that in Bohemia it is certainly the most numerous of all the aquatic Warblers, and literally swarms in some marshy districts. It is common in the countries skirting the Danube, and also in Southern Russia, where, Mr. Goebel says, it breeds numerous in the Uman district. Messrs. Elwes and Buckley record it from Turkey; and it is found in Greece, where, Dr. Krüper says, it arrives rather earlier than the Thrush-like Warbler; but he is unable to say whether it breeds there or not. Colonel Drummond-Hay states that it is common and resident on Corfu, and Erhard that it is a resident on the Cyclades. Lord Lilford found it common in winter in Epirus and Acarnania; and Dr. Krüper says that it is tolerably common near Smyrna. In Palestine, according to Canon Tristram, it is common from the first week in March, and it is a migrant in North-east Africa. Von Heuglin says that it visits Egypt, Nubia, and Arabia, on passage, in spring and autumn, and is at times tolerably common. Loche says that it breeds in Algeria; but it is not recorded from Morocco by either M. Favier or Mr. C. F. Tyrwhitt Drake.

To the eastward this Warbler is found as far as Baluchistan. Dr. Severtzoff states that it breeds in Turkestan; and Mr. Blanford, who obtained it in Persia and Baluchistan, writes as follows:—"The specimens from the Persian highlands, Asupás and Kohrúd, agree perfectly with European skins in the proportions of the quills; but those from Shiráz and Balúchistán have the second (or first long) primary shorter in proportion to the third and fourth than in the typical *A. streperus*. In the latter the second quill is nearly or quite equal to the fourth; in the skins from Balúchistán and Shiráz it is decidedly shorter; and in one specimen from Bampur the second quill is shorter than the fifth. As, however, the difference does not appear constant, and there is variation in the extent to which the wing is rounded, I see no reason for separating the skins

from Southern and South-eastern Persia from *A. streperus*. This Reed-Warbler was found in the same localities as *A. stentoreus*, and appeared to be very common. I found it abundantly in Bampur; but I never met with it farther east in Balúchistán, and it does not as yet appear to have been observed in India. It may possibly occur in Sind; but Mr. Hume did not obtain it in that country. Specimens shot at Bampur in the winter months are generally much more rufous, both above and below, than those killed on the Persian highlands in summer. This difference, I have no doubt, is due to the season of the year, the birds when newly moulted in winter being a much redder brown than in spring. Two specimens from the highlands, however, one shot at Shiráz in June, the other at Kohrúd in July, are equally rufous, perhaps because of their being young birds of the year. This bird doubtless breeds on the Persian highlands."

The Reed-Warbler inhabits marshy and swampy localities like those frequented by the Thrush-like Warbler, and is only found in bush-covered places when the ground is swampy or when marsh is in the immediate vicinity, but is usually to be met with in the dense forests of reed and sedge where it can find close shelter; and here it is to be found almost exclusively during the breeding-season. Unlike the Marsh-Warbler it is seldom seen amongst bushes, and never in trees; but it climbs about amongst the aquatic herbage, seldom going on to the ground. In its movements and general habits it closely assimilates to the other aquatic Warblers, and, like those, creeps through the dense forests of reeds with the greatest ease, climbing about amongst the stems with grace and facility, the body being held rather depressed, and the head rather extended forwards. As a rule, it is not shy, though it is averse to coming out in open places, and, with a little caution, may be approached very closely. On the wing it is active and tolerably swift, but usually flies close to the surface of the water, the tail being expanded and slightly depressed.

The nest of the Reed-Warbler is an artistic structure of dried grasses and bents, usually suspended between the reeds, with which it is closely interwoven; and it is generally very deep, so that as it swings to and fro, when the reeds are agitated by the wind, the eggs cannot be thrown out. Colonel Irby says that, at Casa Vieja, in Spain, "it keeps among the willow bushes, but builds its beautiful nest suspended on the dead stems of the *Epilobium*, or willow herb, which grows in luxuriant tufts in the swampy jungle. These nests are constructed externally of strips of the rind or peel of the dead *Epilobium*-stems interwoven with willow-cotton, the interior being composed of fine grass lined with the same material."

Mr. Stevenson, who has had unusually good opportunities of observing this bird in Norfolk, gives (B. of Norf. i. p. 115) some excellent notes on its nidification and habits, which I transcribe as follows:—"The beautiful little nests of this species, so carefully and curiously suspended on the stems of the reeds, are, with the exception perhaps of that of the Long-tailed Titmouse, the most interesting in construction of any of our British birds. They are formed externally of dried grasses, stalks of plants, and the feathery tops of the reed, the latter generally forming the only lining, with occasionally a bit of wool or a stray feather or two on the edge of the structure. The materials are, however, occasionally much more diversified, especially when, as I shall presently show, the nests are constructed in bushes and garden shrubs. One of these, now before me, is composed externally of dried grasses, studded over with little patches of wool; the interior consisting of a layer of moss, lined with a flax-like substance, procured from the willow (*Salix*?),

and mixed with sheep's wool, feathers, and a few black horsehairs. They are for the most part very compactly made, and in some cases will bear much handling without disarranging the materials; yet this is not always the case, as I have seen some taken on Hickling Broad, built on very slender reeds, and so loosely constructed that I wondered they held together at all; but at the spot where these were found the ground was covered with a sort of wild convolvulus or creeper, whose tendrils encircling both the reeds and the nest had a very pretty appearance, and afforded an unusual support. The ordinary number of reeds selected is three, round which the materials are firmly woven, so as to include them all in the structure, whilst the nest is placed, with instinctive judgment, neither low enough to be affected by the rising of the water, nor yet high enough to be influenced too powerfully by the wind. Occasionally a nest may be found on four reeds; and I once found one on five, and another on two; but these are exceptional cases. Arriving here later than the Sedge-Warblers, the nests of the reed-birds are seldom completed before the end of May; and the young are hatched about the first week in July. In 1852 a Reed-Warbler's nest was found built in a bush near a pond at Beacon Ash; but even in this unusual situation its general character was preserved, being suspended on *three twigs* of the bush, built into it in place of the reeds. This is one of the very few instances in which I have known these birds to breed in any locality not adjacent to reed-beds; but at Ranworth, where the broad joins the garden of Mr. John Kerrison, I have frequently seen the nests of this Warbler built into the laurel bushes by the water's edge, in the same manner as I have just described; and in the summer of 1861 I was shown four or five which had been found in various shrubs in a kitchen-garden at Lakenham, situated by the river-side, with a reed-bed and osier-ground in close proximity. In each of these, twigs of the respective plants were ingeniously woven into the structure itself; and though somewhat shallow, they all retain much of their normal character. The most curious fact, however, in connexion with these nests, was finding a Cuckoo's egg in three of them, and a young Cuckoo, of course 'per se,' in the fourth. This youngster was kept alive for some weeks in confinement, and presented the most absurd appearance when, having grown too large for it, it still attempted to nestle down in its original cradle. Occasionally, but rarely, I have known a Cuckoo's egg deposited in the nest of this species when placed as usual amongst the reeds; but in the above four instances, increased size and depth and easiness of access afforded, no doubt, peculiar attractions. One nest, which had been built in the centre of a currant-bush, presented a most novel and beautiful appearance, the dry materials contrasting with the green foliage, whilst the young fruit hung in bunches above and around it. This species, like the Sedge-Warbler, is an incessant songster, heard at short intervals throughout the day, except in windy weather, but saving its choicest music for the twilight hours. Its lavish notes are thus associated in my mind with many a calm summer's night on the open broads, the stars shining brightly overhead, and the soft breeze sighing through the rustling reeds, mingled with the hum of insect life on the water. It is at such times that the song of these marsh Nightingales is heard to perfection. All is still around, save those murmuring sounds that seem to lull to sleep; the barking of the watch-dog has ceased in the distance; and the hoarse croak of the Coot or Moorhen harmonizes too well with the scene to startle with its frequent repetition. Presently, as if by magic, the reed-beds on all sides are teeming with melody; now here, now there, first one, then another and another of the reed-birds pour forth

their rich mocking notes, taken up again and again by others; and still, far away in the distance, the same strain comes back upon the breeze, till one is lost in wonder at their numbers, so startling to the ears of a stranger, so impossible to be estimated at all during the day. About the first week in June, should the weather be fine and still, is the best time to hear these nocturnal warblers; the sedge-birds, however, as earlier breeders, have by this time almost ceased to sing during the night, their young being already hatched."

The eggs of the Reed-Warbler are French white in ground-colour with a faint greenish tinge, blotched and blurred all over the surface with greenish brown surface-spots and greenish grey underlying shell-markings. All the markings are blurry and ill defined; and some specimens in my collection are very closely marked. In size they average about $\frac{3.0}{4.0}$ by $\frac{2.1}{4.0}$ inch.

Like the other aquatic Warblers the present species feeds on water-insects and their larvæ, caterpillars, spiders, and flies of various kinds, which it either picks off the leaves and stems of the aquatic plants or occasionally from the marshy ground. In the autumn, Naumann says, it will eat berries of various kinds, such as elderberries and currants; and he adds that his father has known it to eat the berries of *Cornus sanguinea* with avidity. It is not an easy bird to keep in confinement, as it is difficult to tame, and by no means hardy; but it can be fed on the same food as the Nightingale. It is a constant and industrious songster; and its song may be heard from early in the morning till late in the evening, and also during the night. Its song, however, is not so good as that of most of its allies, and most nearly resembles that of *Acrocephalus arundinaceus*. Naumann describes the song as follows:—"Its notes are like the syllables *tiri, tiri, tiri, tier, tier, tier, zäck zäck zäck zäck zerr, zerr, zerr, tiri, tiri, scherck, scherck, scherck, heid, heid, heid, tret, tret, tret*, without any great variation; and the entire song is rather a babbling or chattering melody than a song; and when several males are singing at once, which is often the case, it is a peculiar confused sound."

The specimen figured, on the same Plate with *Acrocephalus palustris*, is the bird above described, and is in my collection.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a, b. Twickenham-on-the-Thames (*R. B. Sharpe*). *c.* Cambridge, May 1862 (*Harvey*). *d, ♂.* Piedmont, May 10th, 1870 (*Salvadori*). *e, ♂.* Bampur, Baluchistan, April 7th, 1872 (*W. T. Blanford*).

E Mus. H. B. Tristram.

a, b. Cambridge. *c.* Off Malaga, May 28th, 1858 (*H. B. T.*). *d.* Algiers, May 17th, 1856 (*H. B. T.*). *e, ♂.* Bethsaida, April 2nd, 1864. *f, ♂.* Mount Tabor, April 5th, 1864 (*H. B. T.*).

E Mus. Howard Saunders.

a. Ourkerk, Holland. *b.* Holland (*Baker*). *c.* Cambridge, June (*Bond*). *d, ♀, e, ♂, f, ♀.* Malaga, Spain, May 18th, 19th, and 25th (*Rios*). *g, h.* Malaga, September. *i, k, ♂ ♀.* Malaga, August (*Rios*).

ACROCEPHALUS PALUSTRIS.

(MARSH-WARBLER.)

Sylvia palustris, Bechst. Orn. Taschenb. i. p. 186 (1802).*Acrocephalus palustris* (Bechst.), J. A. Naumann, Naturg. Land- u. Wasservög. Nachtr. Heft iv. p. 202 (1811).*Calamoherpe palustris* (Bechst.), Boie, Isis, 1822, p. 502.*Calamodyta palustris* (Bechst.), Meyer, Taschenb. deutsch. Vogelk. Zus. & Bericht. p. 253 (1822).*Calamoherpe salicaria*, C. L. Brehm, Vög. Deutschl. p. 444 (1831, nec Linn.).*Calamoherpe musica*, C. L. Brehm, op. cit. p. 445 (1831).*Salicaria palustris* (Bechst.), Keys. & Blas. Wirbelth. Eur. p. 53 (1840).*Calamoherpe pratensis*, Jaub. Rev. et Mag. Zool. vii. p. 65 (1855).*Calamoherpe philomela*, C. L. Brehm, Vogelfang, p. 236 (1855).*Rousserolle-verderolle*, French; *Cannajola verdoznola*, Italian; *Sumpf-Rohrsänger*, *Sumpfsänger*, German; *Bosch-Rietzanger*, Dutch; *Sumpsanger*, Danish.*Figuræ notabiles.*Werner, Atlas, *Insectivores*, pl. 29; Kjærb. Orn. Dan. taf. 22 a; Fritsch, Vög. Eur. taf. 18. fig. 8; Naumann, Vög. Deutschl. taf. 81. fig. 3; Gould, B. of Eur. pl. 109; id. B. of G. Brit. ii. pl. 74; Schlegel, Vog. Nederl. pl. 78; Bp. Ucc. Ital. tav. 30. fig. 1.*Ad. Acrocephalo strepero* similis, sed corpore suprâ magis olivaceo et subtùs albicantiore, pedibus pallidè brunnescenti-carneis nec schistaceo-brunneis, remige secundo quam quartus longiore.*Juv.* adulto similis, sed suprâ magis viridi-olivaceus.*Adult Male* (Antwerp). Resembles *Acrocephalus streperus*, but has the upper parts more olivaceous green in tinge, the underparts whiter, and the second quill is longer than the fourth; legs pale flesh-colour with a brownish tinge; beak as in *A. streperus*; iris dark brown. Total length about 5·5 inches, culmen 0·62, wing 2·8, tail 2·3, tarsus 0·95.*Adult Female.* Resembles the male, but is rather less in size.*Young.* Resembles the adult, but has the upper parts rather greener in tinge of colour.

THE Marsh-Warbler inhabits Continental Europe during the summer, migrating southward into North Africa during winter, and is found in Asia as far east as Persia.

According to Mr. J. E. Harting it has occurred at least six times in England; but Professor Newton says, in his new edition of Yarrell's 'British Birds,' that, as it is so difficult to distinguish between prepared specimens of the two species, he considers it premature to admit *A. palustris*

as a British species; and I agree with him so far, that I think much more information than is at present available is necessary ere it can be proved to visit our shores regularly, as several competent authorities believe it to do. But that it does occur in England, at least as a straggler, is certain; for Mr. Monk, of Lewes, has forwarded to me a specimen for examination which is undoubtedly referable to the present species, and not to *Acrocephalus streperus*; and it is probable that the present species has occurred in other instances and been overlooked, owing to its extreme similarity to *Acrocephalus streperus*. Mr. Cecil Smith writes to me as follows:—"I can say no more as to the occurrence of this bird in Somerset than I said at p. 4713 of the 'Zoologist' for 1875, namely that Mr. Howard Saunders and myself found four specimens of the Marsh-Warbler in the collection of Dr. Woodforde, all of which were killed near Taunton; and in the same case with one pair were the nest and one of the eggs which it contained, which was taken at the same time that the birds were shot. I have compared Dr. Woodforde's birds with several skins of both the Marsh- and the Reed-Warbler, and have no doubt of their identity."

On the continent of Europe, however, the Marsh-Warbler is widely distributed. It does not occur in Norway; and it is very doubtful if it has ever been met with in Sweden, though it is said to have bred there, and to be found near Gothenburg. Professor Sundevall says that he has received a specimen from that locality which appeared to him to resemble *A. palustris* more than *A. streperus*; but he does not adduce any further evidence in proof of its occurrence; and Mr. Meves remarks that, although he tried everywhere to find this bird, he never succeeded in obtaining one; but an egg, which he says was that of a Marsh-Warbler, was sent to him, and he was told that it was taken near Landskrona. It does not appear to have been met with in Finland; but Mr. Sabanäeff informs me that it is commoner than *A. streperus* in the Governments of Moscow and Jaroslaf, and is found in great numbers on the islands of the Volga. In the Ural it is common in the Pavdinskaya Dacha, and nests in the bushes on the black-earth plains, where *A. streperus* does not occur. In many parts of Germany it is said to be commoner than the Reed-Warbler. Naumann says that in Anhalt, Saxony, and Brandenburg it is not rare, and in Holstein, especially in Southern Dittmarschen, it is very common. According to Borggreve it is commoner on the Elbe and in parts of Pomerania than *A. streperus*. Dr. Altum found it latterly more common near Münster, where *A. streperus* is nowhere wanting in suitable localities; and Boeck only obtained *A. palustris* in Prussia. Professor Kjærbølling says that *A. palustris* breeds at Thyrsbæk, near Copenhagen, arriving late in April and leaving in August or September; and, as above stated, it is said to be common in Holstein. In some portions of the countries skirting the Rhine it appears to be numerous; and I have received many eggs from the vicinity of Andernach, in Rhenish Prussia. Professor Schlegel says that in Holland it is commoner than *A. streperus*, and breeds throughout the country in suitable localities, arriving early in May and leaving in September. In Belgium it is not rare on the banks of the Meuse, and is not unfrequently found tolerably far from water; and Messrs. Degland and Gerbe write that in France "it appears not unfrequently in the Département du Nord. M. Demézemacker has on several occasions killed it near Bergues, where it probably breeds; M. Baillon has obtained it near Abbeville; and M. l'Abbé Caire frequently met with it in the Basses-Alpes, where it only occurs near Barcelonette and on the tops of the mountains." M. Adrien Lacroix says that it arrives together with *A. streperus*, and frequents the same localities in the French Pyrenees. He met

with it on the banks of the Garonne, at Moulin-du-Château, but adds that he never observed it on large sheets of stagnant water. It breeds throughout the French Pyrenees. Professor Barboza du Bocage includes it in his list of birds occurring in Portugal; but Colonel Irby did not meet with it in Spain, though Mr. Howard Saunders records it from Aranjuez, near Madrid, and he has lent me examples from Malaga for examination. It is stated by M. Bailly to occur in Savoy. In Italy it is tolerably common; and I have received several specimens from Count Salvadori. It occurs in Lombardy, Venice, Modena, Liguria, and Piedmont; and Malherbe includes it in his list of the birds of Sicily, though (Salvadori states) without foundation; and Hansmann says that it occurs on passage in Sardinia, but is rare. I do not find any record of its occurrence in Greece, where, however, it is probably to be met with in suitable localities.

It appears to be tolerably common in Southern Germany; and Dr. A. Fritsch, who says that it is by no means rare in Bohemia, adds that it frequents the willow bushes bordering ponds and rivers. It is found, Messrs. Danford and Harvie-Brown state, commonly in Transylvania, and is also to be met with on the Danube, and doubtless occurs in Turkey, though I have not received specimens from there. It also occurs in Southern Russia, where, Mr. Goebel says, it is tolerably common in the Uman district, being met with most frequently in the spring. Canon Tristram obtained it on one occasion in Palestine; according to Rüppell it occurs in Egypt; and Lichtenstein states that it visits Nubia. Captain Shelley also obtained it at Durban, in S. Africa, as recorded by him (*Ibis*, 1875, p. 72).

To the eastward the present species is found as far as Persia, whence Mr. Blanford brought a single specimen, obtained at Shiraz in December.

In habits this bird differs not a little from the true aquatic Warblers, and has some affinity to the sylvan Warblers. It is far less frequently seen in the marshes, and never in the dense thickets of aquatic herbage, where the true aquatic Warblers are so thoroughly at home; but it is often seen at some distance from water, and most frequently in places where bushes are intermixed with reeds, on the borders of ponds or small pieces of water. It is lively and active, both on the wing and in its movements amongst the foliage; for it not only frequents the bushes but is often seen at some height in the trees, where, in its general movements, it reminds one not a little of the Icterine Warbler; but the body is held more depressed, as in the aquatic Warblers. It climbs about amongst reeds and bushes quite as nimbly as the Reed-Warbler, but is much quicker on the wing, and has a habit of occasionally shooting down from a bough at some height into the low bushes, and will fly up again as suddenly. Naumann remarks that if one finds and follows a Reed-Warbler in a ditch overgrown with tangled herbage, it will creep along amongst the foliage and allow itself to be driven from end to end without showing itself, whereas the present species will at once fly off sideways and take refuge in the bushes, seeking refuge there rather than in the reeds or sedge. Its call-note, which is comparatively seldom heard, is harsh, resembling that of the Reed-Warbler; but the song of the male is exceedingly rich and sweet, far excelling that of any of the aquatic Warblers, and even of many other songsters. It somewhat resembles that of the Icterine Warbler (*Hypolais icterina*), but is richer and more flute-like, and exceedingly rich in compass. Naumann says that it is as sweet and more varied even than the song of the Blackcap and Garden-Warbler, and differs widely from that of any of the true aquatic Warblers. It is also an accomplished mimic, and reproduces the

call-notes of the Swallow, some of the Titmice, and even those of the Sparrows. It sings from late in April or early in May to late in July, not only from morning to night but often all night through, and in this respect replaces in the marshes the queen of the grove songsters, the Nightingale. When singing during the daytime it rarely remains quiet, but hops about in search of food, or chases its allies amongst the foliage, though in the early morning it may often be seen seated in some open situation uttering its rich and varied song.

It feeds on all sorts of small insects, which it picks off the foliage or boughs, and sometimes catches on the wing; and Naumann says that in the autumn it not unfrequently eats currants and elderberries.

Its nest is never built over the water, and not even on marshy ground, but is placed either on dry or nearly dry ground, though often on the edge of water, and can always be approached dry-shod, often amongst nettles or rushes, and not unfrequently at some distance from water. It is sometimes placed in a bush, often amongst nettles, or in a tangled thicket of brushwood and herbage, and seldom below from one to three feet above the ground. It resembles the nest of the aquatic Warblers, most so that of the Grasshopper Warbler, but is more closely built, and of darker-coloured materials. It is usually closely constructed of dried stems and leaves of grasses intermixed with fibres of the nettle, and interwoven with insect-webs, and lined with fine bents and horsehairs.

I possess two very perfect nests of this bird from Holland, obtained there by my artist, Mr. J. G. Keulemans; and one from Silesia has been lent to me by Dr. Crowfoot. All these nests are constructed of dried grass-bents and leaves, neatly shaped, resembling in shape the nest of *Acrocephalus streperus*; and, with the exception of the one from Silesia, they are lined with fine bents and horsehair. The nest from Silesia is lined with bents only, no horsehair whatever being intermixed with the lining material.

Its eggs, usually from four to five, and more seldom six in number, though nearest in appearance to those of the Reed-Warbler, differ very appreciably from these. They are French white, occasionally with a very faint greenish tinge, and are somewhat sparingly marked with small purplish grey shell-spots, and larger, rather more clearly defined, dark brown or purplish brown shell-markings, these latter being more profuse towards the larger end; one or two in my collection are marked only on the larger end, there being merely a dark dot or two on the other part of the egg. In size they average about $\frac{2.9}{4.0}$ by $\frac{2.1}{4.0}$ inch.

Few species have been so much confused in collections as the present one and *Acrocephalus streperus*; for, although they differ so strikingly in song, habits, and especially in their eggs, and when fresh-killed are by no means difficult to discriminate (for the present species is much more olivaceous in tinge of colour above, and whiter below; besides, its legs are pale flesh-brown, whereas *A. streperus* has slaty brown darker legs, has the upper parts more rufous brown or rusty yellow, and the underparts tinged with yellowish buff), yet dried skins gradually fade into what a worthy friend of mine calls museum-colour, and the difference in coloration in plumage becomes scarcely apparent, and the legs also fade, so that even the best authorities have been sometimes at fault in separating them. The best and most reliable characteristic, however, appears to be that mentioned by Degland, viz. the relative length of the primaries; and Mr. Seebohm, who has examined a very large series of specimens, assures me that he has

always found it to hold good. In *Acrocephalus streperus* the second (or first long) quill is *shorter* than the fourth; or in rare instances they are nearly equal in length; whereas in *A. palustris* the second quill is always *longer* than the fourth. As a rule, *A. palustris* has a rather longer wing than *A. streperus*; but I find some exceptions to this.

The specimen figured, on the same Plate with *Acrocephalus streperus*, is the adult bird above described, and is in my collection.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a. Valkenswaard, Holland, May 29th, 1876 (*C. B. Wharton*). *b.* Antwerp, 1870 (*Kroeger*). *c*, ♀. Halle, Saxony (*W. Schlüter*). *d*, ♂. Westphalia (*W. Schlüter*). *e*, ♂. Piedmont, May 6th, 1870 (*Salvadori*). *f*, ♀. Piedmont, May 26th, 1870 (*Salvadori*).

E Mus. H. B. Tristram.

a, ♂. Holstein.

E Mus. Howard Saunders.

a, ♂. Malaga, September 24th, 1873. *b.* Malaga, September 13th, 1872. *c*, ♂, *d*, ♀. Savoy (*Schlüter*). *e*, ♂. Pomerania, May (*Krüper*). *f*, *g*, ♂. Astrachan, April.



Gleaner lith

Hanhart imp

GREAT REED-WARBLER.
ACROCEPHALUS ARUNDINACEUS.

ACROCEPHALUS ARUNDINACEUS.

(GREAT REED-WARBLER.)

- Turdus arundinaceus*, Brisson, Orn. ii. p. 219, pl. xxii. fig. 1 (1760).
Turdus arundinaceus, Linn. Syst. Nat. i. p. 296 (1766, ex Briss.).
Turdus junco, Pall. Zoogr. Rosso-As. i. p. 458 (1811).
Sylvia turdoides, Meyer, Vög. Liv- u. Esthl. p. 116 (1815).
Muscipeta lacustris, Koch, Syst. Baier. Zool. i. p. 166 (1816).
Acrocephalus lacustris (Koch), J. A. Naum. Naturg. Vög. Deutschl. Nachtr. p. 201 (1819).
Calamoherpe turdoides (Meyer), Boie, Isis, 1822, p. 552.
Calamoherpe turdoides, C. L. Brehm, Vög. Deutschl. p. 441 (1831).
Calamoherpe lacustris (Koch), C. L. Brehm, op. cit. p. 442 (1831).
Calamoherpe stagnatilis, C. L. Brehm, ut suprâ (1831).
Arundinaceus turdoides (Meyer), Lesson, Traité d'Orn. p. 419 (1831).
Salicaria turdoides (Meyer), Keys. & Blas. Wirbelth. Eur. p. 181 (1840).
Acrocephalus arundinaceus (L.), Gray, List of Gen. of B. p. 21 (1840).
Salicaria turdina (Meyer), Schlegel, Rev. Crit. p. 27 (1844).
Calamodyta arundinacea (L.), Gray, Gen. of Birds, i. p. 172 (1848).
Acrocephalus turdoides (Meyer), Cab. Mus. Hein. i. p. 37 (1850).
Calamoherpe turdoides (Meyer), Bon. Consp. Gen. Av. i. p. 284 (1850).
? *Calamoherpe media*, Malm. Öfv. Vet. Ak. Handl. 1851, p. 159.
Calamoherpe caffra, Licht. Nomencl. Av. p. 29 (1854).
Calamoherpe major, C. L. Brehm, Vogelfang, p. 235 (1855).
Calamoherpe longirostris, C. L. Brehm, ut suprâ. (1855).
Calamoherpe arundinacea (L.), G. R. Gray, Hand-l. of B. i. p. 208. no. 2940 (1869).
? *Acrocephalus arabicus*, Heugl. Orn. N.O.-Afr. i. p. 289 (1869).
Rousserolle, French ; *Carrisalero*, Spanish ; *Cannareccione*, Italian ; *Baghal*, Maltese ; *Drossel-Rohrsänger*, *Rohrdrossel*, German ; *de Karekiet*, *Rietlijster*, Dutch ; *Rördrossel*, Danish.

Figuræ notabiles.

D'Aubenton, Pl. Enl. 513 ; Werner, Atlas, *Insectivores*, pl. 21 ; Kjærbo. Orn. Dan. taf. 22 ; Fritsch, Vög. Eur. taf. 18. fig. 7 ; Naumann, Vög. Deutschl. taf. 81. fig. 1 ; Gould, B. of Eur. pl. 106 ; id. B. of G. Brit. ii. pl. 72 ; Schlegel, Vog. Nederl. pl. 76 ; Bettoni, Ucc. Lomb. pl. 2.

Ad. capite et corpore suprâ fuscis vix rufescente olivaceo tinctis : striâ indistinctâ superciliari albicante : remigibus fuscis, pallidiore marginatis : caudâ fuscâ : gulâ, gutture et corpore subtùs albis, hypochondriis, subcaudalibus et subalaribus cervino lavatis : rostro fusco, mandibulâ ad basin flavâ : iride fuscâ : pedibus pallidè fuscis.

Juv. suprà magis rufescenti-fuscus, subtùs rufescenti-cervinus, mento albo, striâ superciliari distinctâ cervinâ.

Adult Male (Astrachan). Upper parts generally dull light brown with a warm tinge; an indistinct dull white line passes from the base of the bill over the eye; quills brown, with light edges; tail brown; chin, throat, and underparts white, on the flanks, under wing-coverts, and under tail-coverts washed with pale warm fawn-colour; a few very indistinct striæ on the throat; first primary small, much shorter than the wing-coverts, the second and third equal; bill brown, the lower mandible yellow at the base and underneath to the tip; iris brown; legs light brown; toes and claws darker. Total length about 8 inches, culmen 0·78, wing 3·85, tail 3·15, tarsus 1·2.

Young (Moravia). Differs from the adult in having the brown on the upper parts tinged with warm red, almost rusty ochreous; underparts warm rusty fawn-colour, the chin and upper throat only being white; the streak over the eye is much more clearly defined and is warm fawn-buff.

IN the north of Europe the present species is but rare; but throughout Central and Southern Europe it is tolerably common in suitable localities, and occurs down to South Africa. In Asia it is only found in the western districts, being replaced throughout the major portion of that continent by a smaller form, *Acrocephalus orientalis*.

It is only a rare visitant to Great Britain, and has not been known to breed with us. The first recorded occurrence is that given by Mr. John Hancock of one shot near the village of Swatwell, not far from Newcastle, on the 28th May 1847. Professor Newton, in the fourth edition of Yarrell's 'British Birds,' cites, besides the above occurrence, four others, viz.:—one near Sittingbourne, Kent, recorded by Mr. Morris; one between Tonbridge and Sevenoaks; one near Erith, Kent; and one at Dagenham, Essex, on the 16th June 1853. As remarked by Mr. Gould, freshly killed specimens are not unfrequently sent over to the London markets from Holland; and therefore one should be careful not to trust too implicitly to specimens said to have been shot in England, even though they may have come into the stuffer's hands here in the flesh.

In Scandinavia this Reed-Warbler is extremely rare, and has not been known to occur in Norway. It would appear, however, that a bird described by Malm under the name of *Calamherpe media*, from near Gothenburg, may possibly be referable to the present species; but Professor Sundevall inclines to the opinion that it is distinct, and it may prove to be *Acrocephalus orientalis*. Nor does it appear to have occurred in Finland; and Mr. Sabanäeff says that it is rare in Central Russia: he saw it twice in the Jaroslaf and Romanoff districts; but it is not found in the Moscow Government, though it breeds in that of Smolensk and the northern portions of the Tamboff Government. In the Ural he found it numerous in the Ekaterinburg and Shadrinsk districts; and it breeds on the Ural lakes. In Poland, according to Mr. Taczanowski, it is common everywhere, arriving late in April and leaving about the end of August.

In North Germany it is tolerably widely distributed, and even very common in some localities; but it is rare in the western portion of that empire. Von Homeyer states that he found it exceedingly common near Sabor, in Silesia; and Dr. E. Rey writes that it is the commonest aquatic Warbler in Saxony, where it usually arrives late in April.

According to Mr. J. Collin it occurs here and there in the Danish duchies. Hage found it breeding at Kiel; Mr. Beck observed it at Aaleborg; and it is said to breed annually near Brunsbüttel. According to Mr. A. Benzon it breeds also regularly at Odense.

As above stated, it is rare in the western portions of Northern and Central Germany; but Von Homeyer writes (J. f. O. 1859, p. 54) that it nests annually in the city moat at Mayence. In Holland, according to Schlegel, it is found throughout the country in damp localities, and breeds commonly; it arrives early in May, and leaves about the end of August. In Belgium, where it is said to be abundant in the great reed-beds and wooded marshes of Flanders and the Campine, it is said to arrive earlier, about the middle of April. It occurs also on the islands of the Moselle, but is local; and it is common throughout the greater part of France in suitable localities. In Provence it is resident throughout the year around the Etangs de Berre and the Camargue. It occurs in Portugal, and Dr. E. Rey met with it near Lagos. In Spain, Mr. Howard Saunders writes (Ibis, 1871, p. 215), it is abundant in every reed-bed, where it breeds; and Colonel Irby says that it is exceedingly plentiful in Andalucia, where it arrives in April, and nests late in May. Passing eastward, again, I find it recorded as generally distributed in Savoy, but found only in small numbers; but it is common in Upper Italy, Tuscany, Modena, and the Romagna, where it arrives in April and leaves in October. It is said to be rare in Sardinia, where a few breed; but in Sicily it is common, and generally distributed in marshy localities. I have received examples from Corsica through Mr. C. Bygrave Wharton; and Mr. C. A. Wright says it is found sparingly in Malta in the spring and autumn. According to Lord Lilford it is common and resident in Corfu and Epirus; and Dr. Krüper says that it arrives in Greece in April when the reeds begin to grow, but most pass further north, those which remain commencing to nest late in May. Late in August or in September they migrate southward again. In Southern Germany it does not appear to be very common. Dr. Anton Fritsch says that it is a rather uncommon summer visitant in Bohemia; he obtained it from the vicinity of Elbekostelec, and has seen examples in collections at Pardubic and Frauenberg. The late Mr. Seidensacher informed me that a few pairs breed near Cilli, where it arrives between the 1st and the middle of May, and has eggs late in that month; and in Transylvania, Messrs. Danford and Harvie-Brown write (Ibis, 1875, p. 309), it is very common in the Mezöség. It is found in the countries bordering the Southern Danube, and is very common in the marshes of Southern Russia from April to September. Lord Lilford found it common near Limasol, in Cyprus, in May; and it breeds in Asia Minor, where it arrives, Dr. Krüper writes, about the middle of April in the vicinity of Smyrna, at first frequenting the reedy and overgrown ditches and then retiring to the larger swamps to breed. Keyserling and Blasius record it from Tripoli; and Canon Tristram states that it is very common in Palestine, where there appears to be, he adds (Ibis, 1867, p. 78), two distinct forms of this species, "one decidedly darker and larger than the other—the wings being in the one 3·6 inches, in the other 4·1, from the carpal joint, and the tail respectively 3 and 3·75 inches in length. There is also a very slight difference in the relative length of the second and third primaries." He adds, however, that, with a large series before him from different localities, he could not discover any specific difference. This Warbler is widely distributed in Africa; but Von Heuglin says that it is only an occasional winter visitant to Lower Egypt. According to Brehm it was seen by him on the upper portion of the Blue Nile in January; and Rüppell states that it is common in Arabia. On the west side of the continent it is commoner. Loche says that it breeds numerously in Algeria; and Mr. O. Salvin writes (Ibis, 1859, p. 305) that it is "the commonest species of the Sylviinæ in the marsh of Zana, where its

incessant note day and night assails one's ears. It breeds abundantly amongst the taller reeds." Colonel Irby says that it certainly occurs in Morocco, though it is not included in Favier's list. Dr. Anton Reichenow met with it as a winter resident in the Cameroons; it has been sent to the Paris Museum from the Gaboon; and Andersson states (B. of Damara L. p. 99) that he "found it plentiful in the reedy marshes at Omanbondé. It was always singing, but on the approach of danger immediately retired to the thickest parts of its reedy resorts."

There are examples, in the British Museum and Lord Tweeddale's collection, from Natal; but I do not find it recorded from the Cape colony.

In Asia it does not range far east, probably not further than Turkestan. Mr. Blanford writes (E. Pers. ii. p. 195) that "it is said to have been obtained by Ménériés in the mountains of Tálísh, and in reeds near Lankorán, on the Caspian, and is probably found in Ghílán and Mazandarán. A specimen from Astrakhán, on the Volga, in Mr. Dresser's collection, belongs to the European form of large Reed-Warbler; and I think there is every probability that Ménériés's species was rightly identified, and that the present bird replaces *Acrocephalus stentoreus* in Northern Persia and around the Caspian. Still it is possible that the Lankorán species may be *Acrocephalus stentoreus*." There is no doubt that it occurs in Turkestan, as I have examined specimens in the collection of Lord Tweeddale and Mr. Howard Saunders, obtained there by Dr. Severtzoff; but eastward of that it is replaced by a very closely allied but fairly separable form, *Acrocephalus orientalis*. Mr. Seebohm, who has lately been working at the Acrocephali, has lent me his MS., in which I find detailed measurements of a number of specimens both of *Acrocephalus orientalis* and of the present species; and it appears that the only constant difference is that of size, the eastern form being constantly smaller than the European one. In a large series of specimens the length of wing varies in *Acrocephalus arundinaceus* from 3·6 inches to 3·85 inches, females being, as might be expected, smaller than the males; whereas in *Acrocephalus orientalis* the length of wing varies from 2·85 to 3·4 inches, the usual length being 3·2 inches. I may, however, remark that a single specimen in the British Museum, labelled as having come from Amoy, has the wing 3·5 inches in length, and another in the same collection, a female, stated to have been obtained in Belgium, has the wing the same size, these being the only specimens of those examined that approach each other closely in size.

In habits this bird does not differ much from its smaller allies. It frequents damp, marshy localities, usually inhabiting the large dense reed-beds, where it finds ample chances of concealment. Though large and tolerably heavy, it creeps about amongst the reeds and climbs up the straight stems with the greatest ease. It is exceedingly shy and averse to take wing, preferring to seek refuge amongst the dense thickets of reeds; and when it does fly, it seldom flies far, but soon drops down again into the aquatic herbage. Its flight is jerky and feeble; and the short wings make a fluttering sound as it progresses along with rapid flaps. In the spring, however, the males may often be seen chasing each other on the wing, and they are then extremely restless and quarrelsome. Its call-note is a harsh *tschak* or *tack*, and a deep *tscharr*, not unlike that of a Nightingale, but deeper and harsher. In the spring and to the middle of July the male sings almost incessantly, from early in the morning to late in the evening, and not unfrequently during the night. Its song is loud and not wanting in melody, though not of a high order; and some people liken it to the call of the tree-frogs, and not without reason, though it is much more

musical than that. Like the notes of all the Warblers, it is scarcely possible to reproduce its song by words with any degree of truth; but Naumann attempts it with some success by the following syllables, viz.:—*Kerr, kerr, kerr*; *doré, doré, doré*; *karre, karre, karre*; *kai, kei, kei, ki*; *karra, karrakied*. When singing it usually perches on the top of a high reed, frequently in an open and exposed position.

The food of this Reed-Warbler consists of insects of various kinds which frequent the localities which it inhabits; and, according to some observers, it is said also to feed, to some extent, on berries in the autumn when insects are scarce.

The nest is constructed like that of the common Reed-Warbler, of bents and leaves of grass, fine roots, hemp, &c., and is attached most carefully to several stems of rushes or reeds, which are woven into the nest itself. It is deep cup-shaped, carefully constructed of the above-mentioned materials, a little moss being often intermixed, and is carefully lined with finer bents, and occasionally a little horsehair or reed-cotton. It is usually placed amongst a dense growth of reeds or rushes, and, as a rule, at least three feet above the surface of the water. The eggs, which are usually deposited late in May or early in June, generally four or five in number, are richly marked on a pale blue-greenish ground with purplish grey underlying shell-blotches and dark brown or blackish overlying surface-spots and patches, these latter being larger and more profuse at the larger end. One egg in my collection is pale greenish blue, with only a few scattered spots of pale purplish grey; and several have the ground-colour darker and with a faint brownish tinge. In size they vary from $\frac{3.3}{4.0}$ by $\frac{2.5}{4.0}$ to 1 inch by $\frac{2.7}{4.0}$ inch.

The specimens figured are the adult male and the young bird above described.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a, ♂. Italy, May 10th. *b*, ♀. Italy, May 18th, 1870 (*Salvadori*). *c*, ♂. Corsica, April 16th. *d*, ♂. Corsica, April 22nd, 1875 (*C. B. Wharton*). *e*. Moravia (*Schlüter*). *f*, ♂. Silesia (*Möschler*). *g*, *pull.* S.E. Ural, July 27th, 1872 (*Meves*). *h*, ♂. Astrachan (*Möschler*). *i*. Egypt (*Rogers*).

E Mus. Lord Tweeddale.

a, *b*. Holland, 1864. *c*, ♂. Malaga, 1874 (*H. Saunders*). *d*, ♂. Savoy. *e*. North Italy, 1874. *f*, ♀. Chimkent, Turkestan, April, 6th, 1866 (*Severtzoff*).

E Mus. Brit. Reg.

a, ♀. Belgium, June 18th, 1850. *b*. Bogos Land. *c*. Natal.

E Mus. H. Seeböhm.

a, ♂. Valkenswaard, Holland, May 29th, 1876 (*H. S.*). *b*, ♂. Malaga, April 2nd, 1868 (*H. Saunders*).

E Mus. Howard Saunders.

a, *b*, ♂. Malaga, August 18th and October 6th (*Rios*). *c*, ♀. North Italy. *d*, ♂. Savoy (*Schlüter*). *e*, ♀. Astrachan, May. *f*, ♂. Turkestan (*Severtzoff*).

ACROCEPHALUS STENTOREUS.

(CLAMOROUS SEDGE-WARBLER.)

- Curruca stentorea*, Ehrenb. Symb. Phys. Aves, fol. 66 (1829).
Agrobates brunnescens, Jerd. Madr. Journ. x. p. 269 (1839).
Malacocercus abornis, Hodgs. in Gray's Zool. Misc. p. 83 (1844).
Calamoherpe brunnescens (Jerd.), Blyth, J. As. Soc. Beng. xv. p. 288 (1846).
Acrocephalus brunnescens (Jerd.), Blyth, Cat. B. Mus. As. Soc. Beng. p. 181 (1849).
Calamoherpe longirostris, v. Müll. Naumannia, 1851, Heft iv. p. 27.
Calamoherpe macrorhyncha, v. Müll. Beitr. Orn. Afr. t. 9 (1854).
Acrocephalus stentoreus (Ehr.), Cab. Journ. für Orn. 1854, p. 445.
Salicaria stentorea (Ehr.), Syst. Uebers. p. 23. no. 184 (1856).
Acrocephalus orientalis, G. R. Gray, P. Z. S. 1860, p. 349 (nec Schl.).
Calamoherpe stentorea (Ehr.), Heugl. Faun. Roth. Meer. no. 64; Orn. N.O.-Afr. i. p. 287 (1869).
Calamodyta meridionalis, Vincent Legge, Stray Feathers, iii. p. 369 (1875).

Figuræ notabiles.

S. Stafford Allen, Ibis, 1864, pl. 1; Lahore to Yarkand, pl. xvi.

Acrocephalo arundinaceo similis sed minor, rostro longiore et graciliore: remigibus secundo quintoque subæqualibus, singulatim brevioribus quam tertius aut quartus: maxillâ saturatè corneâ, mandibulâ carneâ versus apicem fusco-corneâ: pedibus viridi-plumbescentibus: iride flavo-fuscâ.

Adult Male (Etawah, 25th March). In general coloration closely resembling *Acrocephalus arundinaceus*; but the wing is shorter, the bill longer and not so stout, the second (or first long) primary is about equal to the fifth, being shorter than the third and fourth; upper mandible dark horn, under mandible flesh-colour with a dusky tip; legs and feet greenish plumbeous; iris brownish yellow. Total length about 8·5 inches, culmen 0·9, wing 3·45, tail 3·3, tarsus 1·15.

Adult Female. Resembles the male.

Obs. In the series I have examined I find some little variation in size as follows—culmen 0·9 to 1·05, wing 3·2 to 3·45, tail 2·75 to 3·3, tarsus 1·05 to 1·17; but there is scarcely any variation in coloration. The striation on the flanks, so well shown in Wolf's plate, does not appear to be at all characteristic or constant; for I find that, as in *Acrocephalus arundinaceus*, some are striated and others lack these markings entirely; indeed, of two examples in the collection of Captain Shelley, both males, shot in March, one is striated and the other is not.

THE range of the present species extends from Palestine and North-east Africa eastward throughout India; but I scarcely think that, as stated by Dr. Jerdon, it ranges into China.

Canon Tristram says (*Ibis*, 1867, p. 78) that he met with, but did not obtain, a Warbler on Lake Huleh, in Palestine, which, judging from its song, he is sure must have been the present species; but I do not find it recorded from any other locality within the limits of the Western Palæarctic Region, except in North-east Africa, whence it was first described by Hemprich and Ehrenberg, who also obtained it in Arabia; and subsequent travellers have also met with it in Egypt; but it appears to have been overlooked by most of the earlier explorers until Mr. S. Stafford Allen remarked (*Ibis*, 1864, p. 97) on its presence near Damietta in a short notice, to which was appended an excellent plate by Mr. Wolf.

All the recent authors who have written on the ornithology of Egypt appear to have met with this species. Captain Shelley writes (*B. of Egypt*, p. 95) as follows:—"This large Warbler is probably a resident in Egypt; for it certainly breeds there, and I have met with a specimen in the Fayoom as early as the 7th of March. Towards the latter end of that month I frequently saw it near Damietta, while hunting for *C. melanopogon* in the forests of thick sedge and reeds which surrounded some of the lakes. It generally keeps low down in the sedge, but will occasionally rise to the top of a tall reed to survey the district. Its plain colouring renders it very difficult to detect; but one is frequently made aware of its presence, either by its call, which in March consists of a single peculiarly loud note repeated two or three times without variation, or from the movements of the sedge caused by its continual motion. In April it begins its love-song, and may then be much more easily procured. Although it frequents the thick sedge, it appears to prefer the proximity of some slight opening, such as is made by a ditch running through the swamp, in the centre of which the reeds do not grow. In such spots it may be watched with ease as it hops from reed to reed, keeping generally within a foot from the surface of the water, busily intent upon capturing the small aquatic insects and shells on which it subsists, and perfectly heedless of observation."

Von Heuglin says that he believes it to be a resident in Egypt. He met with it in the winter, in company with *A. arundinaceus*, in the dense reed-thickets at the mouth of the Nile, in May near Suez, from June to September breeding along the Samahr coast, and he believes he saw it in October in a bay between Ghubet-Harâb and Sela, on the Somali coast. On the Red Sea it frequents the shores where the water is shallow, and the low islands which are covered with *Avicennia* trees and bushes; and he (Von Heuglin) also saw it amongst the reeds in the lagoons, and on *Rhizophora*. In many respects, he writes, "these *Avicennia* represent our marsh-osiers; they grow close to the edge of the water, often form dense thickets, and are green all the year round. These marsh-thickets resound during the summer with the loud ringing song of this Warbler, which is fuller and more varied than the song of its western ally. Its call-note consists of an often-repeated harsh call and a sort of snore (*Schmätzen* und *Schnalzen*); and in its general habits it resembles the other aquatic Warblers, being, except during the hottest time of the day, always active and in motion. It is shy in its mode of life, knows well how to keep concealed, and not unfrequently sings perched on an open spray, but never on the wing. Each pair seems to take possession of a tolerably extensive district. We found a very neat nest on the 18th June 1861, on the island of Schech Saïd, near Massowah, which contained three fresh eggs, and was placed in the fork of a shady *Avicennia*-bush, the roots of which were washed by the water at high tide, at an altitude of nearly six feet above the ground. This nest was purse-

shaped, and the cup measured about 3" in diameter. It was constructed of sea-weed and algæ, together with fine roots, grasses, and bast-like fibres, with which it was fastened to the bush; the eggs are 8-9''' long by $5\frac{3}{4}$ - $6\frac{1}{4}$ ''' diameter, and marked, on a white, pale greenish, or pale yellowish ground, with ochreous yellow, violet-grey, and dark olive-grey spots, which are more densely collected towards the larger end. I believe that this bird must rear two broods in the season, as in the same locality I killed an unfledged bird late in August."

Dr. Severtzoff informs me that he met with both the present species and the Thrush-like Warbler in Turkestan; and Mr. Blanford and Major St. John obtained it in Persia and Baluchistan. Mr. Blanford says (E. Pers. ii. p. 195), it was "rather scarce at Bampur, in Baluchistan, early in April, in reeds by a stream; but it abounded in June near the Lake of Shiraz, and in the great marsh of Asupás north of Shiraz. It evidently breeds in both these localities, but probably leaves the Persian highlands in winter. Its loud monotonous note was frequently heard near Shiraz." He believes that it also extends into Northern Persia; and Mr. A. O. Hume states (Stray Feathers, i. p. 190) that it "swarms in the reedy clumps that fringe and dot the many inland waters of Sindh, and was not unfrequently noticed on the tamarisk bushes where reeds were scarce." According to Dr. Jerdon (B. of India, ii. p. 155), "it is found in most parts of India in the cold weather; for it is only a winter visitant. It extends into Assam and Arrakan. It frequents high reeds and grasses, grain-fields and gardens, where it hunts among the pea-rows, beans, and other vegetables. It clings strongly to the stalks of grain, and makes its way adroitly through thick grass or bushes, concealing itself when observed, and being with difficulty driven out. It feeds on grasshoppers, ants, and other insects." Captain Butler says (Stray Feathers, iii. p. 478) that it is only a cold-weather visitant, and by no means common, in Northern Guzerat in the drier portions, but is not rare in the tank country. It has been met with on the island of Ceylon. Mr. Vincent Legge obtained it at Hambantotta in 1873, and subsequently ascertained that it inhabits the north-eastern districts as well, being very local and only found in tanks entirely overgrown with reeds and other impenetrable vegetation. He found it in a tank near Trincomalie and in the Toparé or Pollnanera tank. He describes (*l. c.*) the Ceylon bird as distinct; but, after carefully reading his description, I cannot believe that he is justified in so doing. Dr. Jerdon states (*l. c.*) that it occurs in China; but, judging from Mr. Swinhoe's notes, this appears to be incorrect. According to Mr. Blyth, however (Ibis, 1867, p. 18), it was received by Mr. Gray from Batchian, and it also occurs in Java.

I give above, all the information respecting the habits of the present species in Egypt and India which I find recorded by the various collectors who have obtained it. It breeds in Egypt, and also numerous in Cashmere, where both Mr. W. E. Brooks and Captain Cock took its nest. Mr. A. O. Hume gives details of its nidification, communicated by these gentlemen (Nests and Eggs of Ind. B. pp. 326, 327), from which I gather that the nest is built amongst the reeds, and is about eighteen inches above the water, supported by three or four reeds. It is a deep massive cup, in the shape of an inverted and slightly truncated cone; externally it is $3\frac{1}{4}$ inches in diameter, and is nearly 6 inches deep; it is massive but by no means neat, composed of coarse water-grass mingled with a few dead leaves and fibrous roots of water-plants. The egg-cavity is lined with finer and more compactly woven grass, and measures about $1\frac{3}{4}$ inch in diameter by $2\frac{1}{4}$ inches in depth. It breeds in May and June, four being the full complement of eggs. Early

in July all the eggs were either empty or contained young. I possess but one egg, for which I am indebted to Mr. W. E. Brooks, which resembles those of *Acrocephalus arundinaceus*; but Mr. Hume, who has examined a large series, describes them as follows:—"The eggs of this species, as might have been expected, greatly resemble those of *A. arundinaceus*. In shape they are moderately elongated oval, in some cases almost absolutely perfect, but generally slightly compressed towards one end. The shell, though fine, is entirely devoid of gloss. The ground-colour varies much; but the two commonest types are pale green or greenish white, and a pale somewhat creamy stone-colour; occasionally the ground-colour has a bluish tinge. The markings vary even more than the ground-colour. In one type the ground is everywhere minutely, but not densely, stippled with minute specks, too minute for one to be able to say of what colour; over this there are pretty thickly scattered fairly bold and well-marked spots and blotches of greyish black, inky purple, olive-brown, yellowish olive and reddish umber-brown; here and there pale inky clouds underlie the more distinct markings. In other eggs the stippling is altogether wanting, and the markings are smaller and less well defined. In some eggs one or more of the colours predominate greatly; and in some several are almost entirely wanting. In most eggs the markings are densest towards the larger end, where they sometimes form more or less of a mottled, irregular, ill-defined cap. In length the eggs vary from 0.8 to 0.97, and in breadth from 0.58 to 0.63; but the average of the only nine eggs that I measured was nearly 0.89 by rather more than 0.61 inch."

The song of this bird is much louder and differs not a little from that of *Acrocephalus arundinaceus*. Mr. W. E. Brooks writes to me, "its call- or alarm-note is a loud *tchak* often repeated; and its song is a loud, chattering, discordant sound. It is exceedingly energetic, and it often sounds as if the bird were choking itself. The Sedge-Warbler's song will give an idea of its quality; but it is immensely louder, and interspersed with numerous guttural choking sounds. As the boat nears the bird it stops its song. It sings in the plains of India in the autumn; but its song is then not so protracted. I have shot this bird among the orange- and citron-trees in my garden at Etawah; but during the time of its northern migration it is, as a rule, only found in very watery localities." Mr. Legge says that "the song of this Warbler is the usual harsh warble of the family, beginning with measured notes and breaking into variations; it has also a 'chet' and a 'churr' note when threading its way through the reeds."

As this bird resembles *Acrocephalus arundinaceus* so closely in general appearance, and it is difficult to give the distinguishing characters on a Plate, I have deemed it advisable not to figure it. The different arrangement of the primaries, the smaller size, and the long bill will at once serve to distinguish it better than could be done by a comparison of a coloured Plate of the two species.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a, ♂. Shiraz, Persia, September 1870 (*W. T. Blanford*). *b*, ♂, *c*, ♀. Etawah, N.W. Provinces, India, March 25th, 1870 (*W. E. Brooks*).

E Mus. Ind. Calc.

a, ♂. Bampur, Baluchistan, April 7th. *b*, ♂. Shiraz lake, South Persia, June 8th. *c*, ♂. Shiraz, July 6th.
d, *e*, ♂, *f*, ♀. Shiraz, July. *g*, ♂. Asupas, between Shiraz and Ispahan, June 26th (*W. T. Blanford*).

E Mus. Berol.

a. Arabia. *b*. Ins-Rásfakil (*Hempr. & Ehr.*).

E Mus. G. E. Shelley.

a, ♂. Fayoom, Egypt, March 7th, 1871 (*G. E. S.*). *b*, ♂. Damietta, Egypt, March 23rd, 1871 (*G. E. S.*).



Conrads lith

M & H Hanhart imp

AQUATIC WARBLER.
ACROCEPHALUS AQUATICUS

ACROCEPHALUS AQUATICUS.

(AQUATIC WARBLER.)

- Sylvia schoenobaenus*, Scop. Ann. I. Hist. Nat. p. 158. no. 235 (1769, nec Linn.).
Motacilla aquatica, Gmel. Syst. Nat. i. p. 953 (1788).
Sylvia aquatica (Gm.), Lath. Ind. Orn. ii. p. 510 (1790).
Sylvia salicaria, Bechst. Gemeinn. Naturg. Deutschl. ii. p. 625 (1807, nec Linn.).
Acrocephalus salicarius, J. A. & J. F. Naumann, Vög. Deutschl. Nachtr. Heft iv. p. 203 (1811, nec Linn.).
Muscipeta salicaria, Koch, Baier. Zool. i. p. 164 (1816, nec Linn.).
Sylvia paludicola, Vieill. Nouv. Dict. xi. p. 202 (1817).
Sylvia cariceti, J. F. Naum. Isis, 1821, p. 785.
Calamoherbe aquatica (Gm.), Boie, Isis, 1822, p. 552.
Sylvia striata, C. L. Brehm, Lehrb. Naturg. i. p. 365 (1823).
Salicaria aquatica (Gm.), Gould, B. of Eur. pl. 111. fig. 2 (1837).
Calamodyta cariceti (Naum.), Bp. Comp. List, p. 12 (1838).
Calamodyta schænobaenus, Bp. op. cit. p. 12 (1838, nec Linn.).
Calamodyta aquatica (Gm.), Bp. Cat. Metod. Ucc. Eur. p. 35 (1842).
Calamodus salicarius, Cab. Mus. Hein. i. p. 39 (1850, nec Linn.).
- Bec-fin aquatique*, French; *Pagliarolo*, Italian; *Seggen-Rohrsänger*, *Binsen-Rohrsänger*, German; *Vandsanger*, Danish.

Figuræ notabiles.

Werner, Atlas, *Insectivores*, pl. 26; Kjærb. Orn. Dan. taf. 22; Fritsch, Vög. Eur. taf. 18. figs. 2 & 19; Naumann, Vög. Deutschl. taf. 82. figs. 2, 3, 4, 5; Sundevall, Svensk. Fogl. pl. 68. fig. 3; Gould, B. of Eur. pl. 111. fig. 2; id. B. of G. Brit. ii. pl. 76.

♂ *ad.* fronte rufescenti-cervinâ, pileo nigro-fusco, striâ superciliari utrinque et striâ centrali cervino-albis: corpore suprâ griseo-cervino vix ochraceo tincto, plumis centraliter saturatè fusco notatis: uropygio et supracaudalibus rufescente ochraceo lavatis: remigibus et rectricibus fuscis pallidiore marginatis, secundariis intimis nigro-fuscis cervino-albido marginatis: capitis et colli lateribus colloque postico griseo-cervinis fusco striatis: corpore subtùs albo vix cervino tincto, gutture imo et hypochondriis fusco striatis, subcaudalibus cervino lavatis: rostro fusco, ad basin mandibulæ flavicante: pedibus pallidè flavo-fuscis: iride fuscâ.

Juv. adulto similis sed ubique rufescente ochraceo lavato, remigibus et rectricibus eodem colore marginatis, corpore subtùs ochraceo-cervino fere immaculato, mento albo.

Adult Male (Karabolska, 24th July). Crown blackish brown, forehead reddish buff; on each side of the crown a broad buffy white stripe passes over the eyes and ear-coverts; and a median stripe of the same colour extends from the forehead to the back of the head; upper parts greyish buff with a slight

yellowish tinge, each feather with a dark brown median patch; rump and upper tail-coverts washed with warm ochraceous; quills and tail-feathers brown, with light margins; the inner secondaries blackish brown, edged with buffy white; sides of the head and neck and hind neck buffy grey with dark striations; underparts white with a faint buff tinge; lower throat and flanks striated with brown; under tail-coverts tinged with buff; bill dark brown, the base of the lower mandible yellowish; legs light yellowish brown; iris dark brown. Total length about 4.5 inches, culmen 0.4, wing 2.4, tail 1.95, tarsus 0.8.

Young (Metlino, S.E. Ural, 30th July). Differs from the adult in having the entire upper parts washed with warm rufescent ochreous, the margins of the quills and tail-feathers being of the same colour; chin white; rest of the underparts warm yellowish buff, fading to buffy white on the centre of the abdomen; no striations on the underparts, except a faint sign of one or two on the side of the breast. Mr. Meves marks this specimen as being in nestling plumage; but the tail appears full-grown.

Obs. There appears to be scarcely any difference between the spring and autumn plumage of this bird, judging at least from specimens I have examined. A specimen in Mr. Saunders's collection, obtained at Malaga on the 11th September, is in immature dress, and resembles the young bird above described, but is paler, and there are a few striations on the side of the throat.

THE range of the Aquatic Warbler is, comparatively speaking, restricted; for it is not met with in Northern Europe, except as a straggler, being confined to the main continent; and though it certainly ranges as far east as the Ural, I find no record of its occurrence to the east of that chain of mountains. It passes the summer in the northern portions of its range, and migrates southward in the winter, at which season it is said to visit North-east Africa; but it breeds in the north-western part of that continent.

It has occurred in Great Britain at least on three occasions, and may possibly have been oftener obtained but not recognized. Professor Newton, in the edition of Yarrell's 'British Birds' now in the process of being issued, says (i. p. 380):—"The first example of this bird announced as having occurred in England was found by the editor in the collection of Mr. Borrer, who certified that it was observed, October 19th, 1853, creeping about among the grass and reeds in an old brick-pit a little to the west of Hove, near Brighton, and that, having been shot, he saw it just after it had been skinned by Mr. H. Pratt of that town. The bird had been thought to be an unusually bright-coloured specimen of the Sedge-Warbler; but its real character being made plain, it was soon after, by Mr. Borrer's kind permission, exhibited, May 8th, 1866, at a meeting of the Zoological Society (Proc. Zool. Soc. 1866, p. 210). In the following year Mr. Harting recorded simultaneously in the 'Zoologist' (s. s. p. 946) and 'The Ibis' (1867, p. 469) the fact that he possessed a second British specimen of the species which had been obtained near Loughborough, in Leicestershire, in the summer of 1864. In February 1871 Mr. J. H. Gurney, junior, detected among the British birds in the Museum at Dover a third example of the Aquatic Warbler, which the curator, Mr. Charles Gordon, stated he himself had shot near that town, though his note of the date has been lost. Mr. Gurney has since pointed out (Trans. Norf. and Norw. Nat. Soc. 1871-72, p. 62) that the bird figured as a Sedge-Warbler in Hunt's 'British Ornithology' was undoubtedly of the present species, and accordingly that in all likelihood the Aquatic Warbler had occurred in Norfolk so long ago as the year 1815; but as no letterpress accompanies the plate, the supposition must always remain uncertain."

It has not been met with in Norway, Sweden, or Finland; and I find no record respecting its occurrence in Russia in the notes I have received from Mr. Sabanäeff or in the literature I possess on the avifauna of that country; but I possess examples from the South-eastern Ural, which proves that the range of the present species certainly extends as far east as those mountains. Kessler certainly includes it in his work on Russian ornithology, but states nothing as to where it occurs. I have been told by Mr. Taczanowski that it is found in Poland; and it appears to be tolerably widely distributed in Germany. Borggreve says that it is a summer visitant, being found chiefly in the western portion. Von Homeyer met with it during passage on the Polish frontier. Tobias observed it in Lausitz, but chiefly during migration. Gloger states that it is not rare in Silesia; and Borggreve himself, though he never met with it in the eastern districts, found it common in Münsterland several autumns in succession. Wiepken speaks of it as visiting Oldenburg regularly during summer; and Bolsmann obtained it near Münster at the same season. It is said to visit Westphalia and Anhalt less frequently than formerly on passage; and it has been observed near Stettin frequenting the willow bushes. Kjærbølling says that, according to Mr. Mecklenburg, it breeds at Flensburg; and Mr. E. Hage informed him that it is not uncommon in Holstein, and breeds near Glücksborg. Mr. A. Benzon, however, writes to me as follows:—"Now and again this bird is found in Denmark; but it is not easy for any one but a good ornithologist to distinguish it at once from the Sedge-Warbler, and I believe that many of the records respecting its occurrence here must be accepted with caution. It is, however, probable that it breeds not very unfrequently with us." Mr. Gätke has obtained three examples on Heligoland. It is stated by Baron von Droste Hülshoff to occur on the coast of East Friesland during passage; and he thinks it probable that it touches the island of Borkum during migration. Baron De Selys-Longchamps says that it occurs, though very rarely, in Flanders in summer; and it is stated by Degland and Gerbe to occur in France, on the banks of the Var and the Rhône, and in the marshes of the Crau; as an annual migrant it occurs in the departments of the Aube, Somme, and Nord. It arrives in the south in the month of April; and some remain to nest in the marshes of the Camargue. In August the return migration commences in much greater abundance, and continues till the end of September.

With regard to its occurrence in Spain, Mr. Howard Saunders writes to me as follows:—"The statement in 'The Ibis' (1871, p. 214) that this species *with nest and eggs* had been sent to me from the neighbourhood of Malaga arose from a printer's error. I have received a good many specimens obtained in some marshes of that district, all in autumn; but I have, as yet, no proof of its nesting there, and, strange to say, no specimens have ever been sent to me from the reed-beds of the lake of Albufera, near Valencia, which are regularly visited by a friend who pays great attention to the Marsh-Warblers." Colonel Irby, in his notes on the ornithology of the Straits of Gibraltar, says that he only once met with it in Andalucia. According to Bailly it appears in Savoy early in April, and remains to breed, nesting amongst the reeds in the large marshes and lakes, departing in September, when its numbers are also augmented by arrivals from neighbouring districts.

A spring visitant to Italy, which country it leaves in the autumn, it is not rare in Lombardy, though not positively known to breed there; in Piedmont and the marshes it is not very abundant; but in Tuscany it is common. According to Doderlein it is rare in the province of Modena,

but nests in that of Bologna. In Sicily, according to the same author, it is abundant in the marshes of the Anapo, and those near Catania; and it appears to be found in the island of Sardinia; and Mr. A. B. Brooke states (*Ibis*, 1873, p. 244) that it is moderately common and breeds there. It is not uncommon in many parts of Southern Germany. Mr. Jäckel says that it is found in Bavaria during passage, and he observed it between the 19th April and the 1st May, and again in autumn after the 19th August, but he observed none later than the 6th September. On one occasion he observed one at Mühlweiher on the 31st July. Dr. Anton Fritsch says (*J. f. O.* 1871, p. 195) that in most parts of Bohemia it is rarer than the Sedge- and Reed-Warblers; but Voboril obtained numerous examples from a small lake near Okor; and Palliardi speaks of it as being one of the commonest Warblers near Franzensbad. The late Mr. E. Seidensacher informed me that he met with it in Styria, near Dobritschendorf, in November 1862, which was the only instance he had on record of its occurrence there. It has been met with in the countries skirting the Danube, but is stated by Messrs. Danford and Harvie-Brown to be rare in Transylvania. Dr. Krüper writes that it is met with in Greece in winter and on passage, but does not remain there to breed. I have no data as to its occurrence in Turkey; but it has been met with in Southern Russia; for Professor von Nordmann says that he once, on the 18th April, 1835, observed what he calls a family party of this species near Odessa, but he did not subsequently obtain any specimen. It is said to have been met with in Asia Minor, but is not recorded by Canon Tristram as occurring in Palestine. In North-east Africa it is a straggler of very rare occurrence. Von Heuglin says that it occasionally visits Lower Egypt in winter; but Captain Shelley suggests that there must have been an error in the determination of his specimens. It is, however, not so very uncommon in North-west Africa. Loche states that it occurs sparingly in the marshes of the river Chelif and other suitable spots in Algeria; and Canon Tristram found it breeding there. Mr. O. Salvin also writes (*Ibis*, 1859, p. 305) as follows:—"At the head of the little marsh of Aïn Djendeli I more than once observed a pair of this Warbler. We afterwards found it more abundant at Zana, where it was breeding. In its habits it much resembles the common Reed-Warbler; the eggs also are similar." Mr. C. F. Tyrwhitt-Drake obtained it in Morocco in March; but M. Favier gives no record of its occurrence at Tangier. Dr. C. Bolle records its occurrence in the Canaries; and Webb and Berthelot state that it inhabits Gran Canaria; but Mr. Godman remarks that it cannot be common there, as there are so few places in the island adapted to its habits. He did not observe it during his short visit there. It does not, so far as I can ascertain, range further east than the Ural, and was not met with in Persia by Messrs. Blanford and St. John.

In habits the present species has much affinity to the Sedge-Warbler; and, like that bird, it frequents damp and marshy localities where there is an abundance of aquatic vegetation, and where the reeds and flags are dense and high; but it is stated to prefer such localities where the latter are abundant and the reeds are more thinly scattered about. Naumann says that where the vegetation is high and consists of *Carex paludosa*, *C. ampullacea*, *C. acuta*, &c. &c., where small patches of grass are surrounded by water and morass, and where large bunches of *Euphorbia palustris* and small willow thickets are scattered round, the present species is generally to be met with amongst the aquatic vegetation, and less seldom on the willows. It is an active, restless, and very shy bird; and should any danger threaten, it slips away amongst the vegeta-

tion, passing through the dense forest of flags &c. with the greatest agility and ease; and it is only with the greatest difficulty that it can be shot. When followed, it slips away amongst the reeds and flags, not taking wing unless compelled to do so, and then only flitting from covert to covert. On the wing it resembles the Sedge-Warbler, and can only be distinguished from that bird by the difference in colour, and not by any peculiarity in its mode of flight. On the ground it does not hop, but runs like a Pipit, and with tolerable speed. It is, however, most generally seen climbing about amongst the flags and water-grasses; and it appears almost to glide along the stems of the plants, so actively and gracefully does it climb up them. It feeds on various sorts of aquatic insects, and such as frequent the plants amongst which it lives; and it is said to search after food closer down to the water and not so high up on the plants as the allied species of Aquatic Warblers do. Its call-note resembles that of the Sedge-Warbler, as does also its song; but the latter is scarcely so rich or varied, and is shorter than the song of that species. When singing the male remains concealed amongst the sedge, but often climbs up to the top of a stem; or sometimes it sings on an exposed twig of a willow; but it never remains long in the same place. It usually sings in the early morning and towards evening; and its song may be heard from the end of April into July. When uttering its song it lets the tail droop, and the feathers on the crown and throat are slightly erected, and the bill held pointing somewhat upwards.

I have not had an opportunity of observing the nesting-habits of the present species, and have therefore relied on information obtained from others, and especially on the excellent account published by Naumann (Vög. Deutschl. iii. pp. 680-683) for particulars as to its nidification. Naumann says that it breeds much earlier than its allies, and that he has obtained its eggs one or two weeks earlier than those of the Sedge-Warbler. Old birds have deposited their eggs in the latter part of May, or a week earlier in warm seasons. Should any one approach the nest, the bird slips quietly off; and when there are eggs it is seldom seen; but should the young be hatched, both parents hover round uttering anxious cries, and will approach tolerably close to the intruder, and the female will often try to lure him away from the nest. This latter is placed in more open localities than that of the Sedge-Warbler, and frequently on the banks of ditches in the marshes or the borders of the ponds. It is generally placed in a bunch of sedge or amongst dwarf willow growth, seldom amongst plants that have grown very high, and never in places where the reeds (*Arundo phragmitis*) are very plentiful. Usually it is placed about a foot or eighteen inches above the ground, but sometimes quite low down and almost touching the soil, though it is never placed on the ground itself. In general form and appearance it much resembles the nest of the Sedge-Warbler, but is always smaller in size, by which it may usually be distinguished. It is constructed of coarse stems of plants and bents, sometimes a few roots, then of finer bents worked together with spiders' webs, and sometimes intermixed with plant-cotton; and, according to Naumann, a few feathers are sometimes used; the interior is neatly lined with horsehair. In general structure the nest is somewhat loose and light, but at the same time it is tolerably well built. The eggs, usually four, but occasionally five, in number, resemble those of the Sedge-Warbler, but are rather smaller in size, and the ground-colour is paler and rather more yellow in tinge. Naumann, who has examined many, says "they differ from those of the Sedge-Warbler in having the ground-colour yellower and markings more olivaceous;

and most of the eggs have a dark ring round the end, which is wanting in those of the other species; and the surface of the shell is smooth, though not glossy. The shell is fragile and thin; and the form is short oval, frequently pointed towards one end and blunt at the other. The ground-colour is a green-yellowish white, which is clouded by numerous markings of a pale yellowish olive-brown colour, which are confluent (forming a ring) round the larger end, darkest in the central part; all the markings are dull and blurred, and in some specimens quite pale; and in these the ring is frequently wanting. The eggs vary considerably; and I possess one which has the ring round the smaller instead of the larger end. There are always a few fine black spots or scratches on these eggs." I only possess a few eggs of the Aquatic Warbler which agree with those above described by Naumann, and most nearly resemble the eggs of the Sedge-Warbler.

Mr. Benzon, who has found it breeding in Denmark, writes to me as follows:—"In 1867 I had a small country place at Charlottenlund, about four English miles from Copenhagen; and a pair of Aquatic Warblers frequented my garden the whole summer, and built close to it. When the young birds were hatched the whole family might be seen daily, either in the garden or in a little bit of reed-covered marsh not far off, and I was frequently able to show them to my ornithological friends. The eggs are smaller, and, as a rule, more sparingly and less boldly marked than those of the Sedge-Warbler, which they otherwise resemble. Those I possess measure 15.5 by 12 to 16 by 12.5 millimetres."

The specimens figured are an adult and a young bird from the Ural, and are those above figured.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a, ♂ *ad.* Central Germany (*Gardiner*). *b*, ♂ *ad.* Karabolska, S.E. Ural, July 24th, 1872 (*W. Meves*). *c*, ♂ *ad.* Metlino, S.E. Ural, July 28th, 1872 (*W. M.*). *d*, ♀ *juv.* Metlino, July 30th, 1872 (*W. M.*).

E Mus. Howard Saunders.

a, *b*, ♂, *c*, *d*, ♀. Malaga, September 11th, 1871. *e*, ♂, *f*. Malaga, September 23rd, 1873. *g*, *h*, ♀. Malaga, September 26th. *i*, ♂. Malaga, October 10th, 1874. *j*, ♂. Ural, July 24th (*Meves*).



M. N. Hartert mp

1. MOUSTACHED SEDGE WARBLER.
LUSCINIOLA MELANOPOGON
 2. SEDGE WARBLER.
ACROCEPHALUS SCHÆNOBÆNUS

ACROCEPHALUS SCHÆNOBÆNUS.

(SEDGE-WARBLE.)

- Ficedula curruca sylvestris* sive *lusciniola*, Briss. Orn. iii. p. 393 (1760).
Motacilla schænobænus, Linn. Syst. Nat. i. p. 329 (1766).
La Roussette ou la Fauvette des Bois, Buff. Hist. Nat. Ois. v. p. 139 (1778).
Sylvia schænobænus (L.), Lath. Ind. Orn. ii. p. 510 (1790).
Sylvia phragmitis, Bechst. Orn. Taschenb. i. p. 186 (1802).
Acrocephalus phragmitis (Bechst.), J. A. Naum. Naturg. Land- und Wasser-Vög. Nachtr. Heft iv. p. 202 (1811).
Muscipeta phragmitis (Bechst.), Koch, Baier. Zool. i. p. 163 (1816).
Calamoherbe phragmitis (Bechst.), Boie, Isis, 1822, p. 552.
Calamodyta phragmitis (Bechst.), Meyer, Taschenb. deutsch. Vogelk. Zus. und Bericht. p. 253 (1822).
Calamodus, Kaup (*Sylvia phragmitis*, Bechst.), Natürl. Syst. p. 117 (1829).
Calamoherbe tritici, C. L. Brehm, Vög. Deutschl. p. 449 (1831).
Calamoherbe schoenibænus (L.), C. L. Brehm, op. cit. p. 450 (1831).
Salicaria phragmitis (Bechst.), Selby, Brit. Orn. i. p. 201 (1833).
Calamodyta schænobænus (L.), Bp. Comp. List, p. 12 (1838).
Caricicola phragmitis (Bechst.), C. L. Brehm, Vogelfang, p. 236 (1855).
Caricicola tritici, C. L. Brehm, ut suprâ (1855).
Caricicola schoenibænus (L.), C. L. Brehm, ut suprâ (1855).
Caricicola subphragmitis, C. L. Brehm, ut suprâ (1855).
Acrocephalus schænobænus (L.), Newton, in Yarr. Brit. B. ed. 4, i. p. 376 (1873).

Bec-fin phragmite, French; *Forapaglie*, Italian; *Schilf-Rohrsänger*, German; *Rietzanger*, Dutch; *Guul Rörsmutte*, Danish; *Siv-sanger*, Norwegian; *Säfsångare*, Swedish; *Ruohokerttu*, Finnish.

Figuræ notabiles.

Werner, Atlas, *Insectivores*, pl. 27; Kjærb. Orn. Dan. taf. 22 a; Fritsch, Vög. Eur. taf. 18. fig. 10; Naumann, Vög. Deutschl. taf. 82. fig. 1; Sundevall, Svensk. Fogl. pl. 14. fig. 5; Gould, B. of Eur. pl. 110; id. B. of G. Brit. ii. pl. 75; Schlegel, Vog. Nederl. pl. 79.

♂ *ad.* pileo nigro-fusco rufescenti-brunneo striato: striâ superciliari flavo-albidâ: loris et regione paroticâ brunneis: collo postico, dorso et tectricibus alarum sordidè fulvo-fuscis, saturatè fusco adumbratis: uropygio et supracaudalibus rufescenti-fulvidis: rectricibus nigro-fuscis, vix pallidiore marginatis: remigibus nigro-fuscis, extûs pallidè brunneo marginatis: mento et gutture albis: corpore reliquo subtûs cervino, hypochondriis et subcaudalibus saturationibus: rostro fusco, ad basin mandibulæ flavido: iride fuscâ: pedibus pallidè brunneis.

♀ *ad.* mari similis, sed subcaudalibus pallidioribus, corpore subtûs saturatiore.

Juv. corpore suprâ magis rufescente et magis conspicuè notato : corpore subtùs pallidè rufescenti-cervino, gulâ nigro-fusco guttatâ.

Adult Male (Asia Minor, 27th April). Crown blackish brown streaked with tawny brown; over the eyes and ear-coverts a yellowish white streak passes from the base of the bill; lores and ear-coverts brown; nape, hind neck, back, and wing-coverts dull reddish brown clouded with dark brown; rump and upper tail-coverts rufescent tawny; tail dark brown with slightly lighter margins; quills blackish brown with light-brown margins, these margins being broader on the inner secondaries and the larger wing-coverts; chin, throat, and centre of the abdomen white; breast and rest of the underparts pale buff, the flanks and under tail-coverts being rather deeper and rufous in tinge; bill dark brown, the base of the under mandible yellow; iris brown; legs pale brown. Total length about 4·75 inches, culmen 0·55, wing 2·65, tail 2·1, tarsus 0·82, first primary very small and narrow, shorter than the wing-coverts, second rather longer than the fourth, third quill the longest.

Female. Resembles the male; but the underparts generally are darker, and the under tail-coverts less rufous.

Young (Reading). Resembles the adult; but the upper parts are more rufous and more clearly marked with blackish brown: the underparts are warm rufescent buff, and the throat is spotted with blackish brown.

THROUGHOUT the whole of Europe, from about 70° N. lat., the Sedge-Warbler is pretty generally distributed; and during the winter season it visits North Africa, where, however, it does not range very far south.

In Great Britain it is certainly the commonest of the Aquatic Warblers, and breeds in every county, arriving in April and leaving in September; but in exceptional cases it has been known to remain with us over the winter, though, so far as I can gather, there are but few instances of this having occurred. Mr. Cordeaux says that it leaves the Humber district late in September or early in October, and that he has known a few to remain until the third week in this latter month. Mr. Metcalfe informs me that it is very common on Brigsteer Moss, near Kendal; and Mr. Robert Gray writes that the present species is "a very common species in many parts of Scotland, but especially abundant in the western counties, extending from the south of Wigtown to the north of Argyle. It is by no means uncommon even in western Inverness and Sutherland. It frequents the island of Mull in limited numbers, and will perhaps be found in Skye, especially on the eastern side, where there is but a short separation from the mainland of Inverness; and it is also found sparingly in Islay."

According to Thompson it is a regular summer visitant to Ireland, and occurs throughout the island in suitable localities from north to south. In Scandinavia it is common, but not in all parts of the country; for Mr. Collett informs me that, curiously enough, it only breeds in the north of Norway, and is of extremely rare occurrence in the southern districts of that country. This species, he writes to me, "breeds sporadically in the more northern districts, and was met with on Tjöttö, in Nordland, in June 1876, by Mr. Landmark, Inspector of Fisheries, at Bodö by Mr. Godman; and it has been observed in almost all suitable localities along the Lofoten Islands and the interior of Finmark, and is most numerous probably on Tromsö. It does not occur in the northern portions of Finmark, as there are no localities suitable for it; but I met

with it in several places on the Porsangerfjord, in 70° N. lat., in July 1876. Those which pass the summer in Nordland and Finmark must pass and repass through Swedish and Russian Lapland; for it is never found in summer in Southern Norway, and but very rarely on passage; for I only know of one specimen, obtained near Christiania as long ago as in 1847."

Professor Sundevall says that during the summer season it is found throughout Sweden, in suitable localities, up to about as far north as Gefle, in 61° N. lat., and near Stockholm and Upsala and in Southern Dalecarlia and Wermland it is not uncommon. Mr. Meves frequently saw it in Skane, but not on Öland; and, he adds, he never found it so numerous as at Hjelstavik late in June. He also found it common in Northern Russia, from the Ladoga canal to Onega Bay, along the Dvina as far as Archangel, where Messrs. Alston and Harvie-Brown found it numerous in suitable localities. Magnus von Wright speaks of it as being a common species in Southern Finland; and Professor Malmgren says (Ibis, 1870, p. 149) that he possesses a specimen obtained at Uleåborg late in July by Mr. Dahlström, and that Wilhelm von Wright observed it at Karesuando, in 65° N. lat.

Mr. Sabanäeff informs me that this is the most numerous of the aquatic Warblers throughout Russia, and when in the Ural he found it especially common in the Ekaterinburg and Shadrinsk Governments. Borggreve says that it is generally distributed throughout North Germany, but is, on the whole, rather rare than otherwise. Von Preen, however, records it as common in Mecklenburg; and Gloger says the same respecting its occurrence in Silesia; but Bolsmann is not certain if it breeds in Westphalia. Dr. E. Rey informs me that it arrives in Saxony late in April, and breeds numerous near Halle, both near and at some distance from water, but usually where nettles grow abundantly. Kjærbölling speaks of it as being very common throughout Denmark wherever there are marshes; and it is a common summer visitant to Holland, Belgium, Northern and Central France; but in the south of France it is only seen on passage, and even then is not very numerous.

Mr. A. Lacroix says that in the French Pyrenees it arrives late in April and leaves from the end of August to the middle of September. In most localities where the nature of the country is suitable it breeds, and is resident in the Hérault, and, to some extent, in the Pyrénées orientales.

I do not find any record of its occurrence in Portugal; nor did Colonel Irby obtain it in Southern Spain. Mr. Howard Saunders saw it near Malaga in winter; but he does not think that it breeds in Southern Spain. It is tolerably common in Savoy; and Salvadori says that it occurs throughout Italy from April to October, and describes its nest and eggs; but it is somewhat strange that it is omitted from the list of birds which nest in Lombardy, one of the most northern provinces, and that it should be said not to breed in the south of France. Professor Doderlein considers it to be a somewhat rare visitant during the seasons of migration to the Modenese territory; but in Sicily it is abundant on passage, being found more especially in the marshy districts, such as Catania, Lentini, and Mazzara, though it is very doubtful if any ever remain to breed there. In Greece, according to Dr. Krüper, it occurs on passage and in winter, but does not remain to breed there. Drummond-Hay says that it is resident in Corfu and Crete. Dr. A. Fritsch states that it breeds commonly near Prague, in Bohemia, where it is certainly commoner than the Aquatic Warbler; and the late Mr. E. Seidensacher informed me that it occurs sparingly near Cilli, in Styria, on the autumn passage. Mr. Goebel says that he has

observed it in summer in the Uman district, in South Russia, where it becomes very common in the autumn. Professor von Nordmann says that it is abundant in Bessarabia and other provinces of New Russia; and Ménétriés shot it at Lenkorán, on the Caspian, where he met with it in rice-fields and amongst reeds. The specimens, he says, had a rather longer beak and shorter tail than those from Southern France. Strickland and Krüper both record it as occurring near Smyrna, in Asia Minor, in winter; and, according to Canon Tristram, this species was "very common in Palestine in every locality where the herbage and moisture gave them the slightest cover." Captain Shelley found it common in Egypt in winter; and Von Heuglin says that it visits Egypt during winter with tolerable regularity, but is scarcely to be called common. Hemprich and Ehrenberg obtained it in Nubia; and Von Heuglin received several which were shot on the Sobat river in March 1854. Loche records its occurrence in Algeria; and Mr. Taczanowski says that he observed several Sedge-Warblers in a marsh in the province of Constantine on the 28th of March. According to Colonel Irby, Favier says that it is very rare near Tangier, and he seldom saw more than one or two on passage, in March or in September; and Mr. Andersson obtained examples, identical with British-killed specimens, in Damara Land. I do not find any authentic instance of its occurrence in Asia proper, except that Dr. Severtzoff states that it breeds in Turkestan; Pallas's statement that it occurs in Siberia doubtless refers to a distinct species.

In general habits the present species assimilates tolerably closely to the Aquatic Warbler; and, like that bird, it inhabits the dense thickets of aquatic plants, through which it creeps, almost mouse-like, with the greatest ease and agility. As it frequents the thick sedge- and reed-patches, and but seldom shows itself in open places, it is not easy to watch its movements, though if one keeps quiet for a time it relaxes its vigilance, and may be seen flitting from the top of one plant to another; but it soon dives down again into the thickest portion of the reed- or sedge-bed and is lost to view. When suddenly startled it will fly a short distance in a wavering uncertain way, its flight being irregular and feeble, the tail being much expanded and somewhat depressed. Occasionally it may be seen amongst some old pollard willows which skirt the water's edge; and when it finds itself an object of attraction it will retreat from branch to branch, always seeking the densest cover, until at last, compelled to take wing, it flits off with an irregular wavering flight to seek shelter in the nearest sedge-patch.

Exceedingly active and lively in its movements, the Sedge-Warbler is a most industrious songster; and the pleasant note of the male may be heard not only during the day-time but at night, and from the time when it arrives until the early part of August. Its call-note, a somewhat harsh call, something like that of the Whitethroat, is frequently uttered; and the song of the male may be ranked amongst the best of the aquatic Warblers'; for though some of the notes are harsh, and the song itself is frequently uttered hurriedly, yet it is pleasant and musical and by no means wanting in depth or power. Naumann says that in some of the strophes one may find a distant resemblance to the song or note of the Yellow Wagtail and of the Swallow. When singing, the bird is usually perched on some elevated stem, where it sits with its throat swelled out, its beak open, crest erected, and tail somewhat depressed, appearing to bring forth its song almost with difficulty. When its song is ended, or even whilst singing, it will descend along the stem of the reed, or flutter off to another perch. Frequently it has some favourite perch, where it may usually be found singing, and which, when undisturbed, it visits daily. It is an uneasy

quarrelsome bird, especially during the breeding-season, when the male is in continual warfare with other males of its own species as well as with other small birds which frequent the same locality. Its food consists of small insects which frequent the aquatic herbage where it resides; and it seeks for these both on the damp ground and on the leaves and stems of the plants, though chiefly the latter; and, according to Naumann, when, in the autumn, insects are scarce, it will feed on elderberries.

For the purposes of nidification it resorts to the dense patches of aquatic herbage, especially where *Carex*, *Euphorbia*, &c. are plentiful, rather than where the reed (*Arundo*) predominates; and its nest is usually placed in localities which are difficult of access, and where one cannot approach dry-shod, usually as far from the shore as possible. The nest is placed near the swampy ground amongst the dense-growing stems of the water-plants, with which it is closely interwoven and fastened. It is constructed of dry, usually light-coloured stems of grasses, fine rootlets, and often a little green moss, and is lined with fine bents, horsehair, and feathers, sometimes with wool, and is a very artistic and carefully finished structure. Its eggs, from four to six in number, are usually deposited in May, only occasionally as late as early in June; and but one brood is raised in the season. The eggs of the Sedge-Warbler, of which I possess a tolerable series, are pale yellowish brown or warm buff, so closely dotted with darker brown or greenish buff as to appear almost uniform in colour; sometimes they are streaked with short hair-like lines of black. In size they average about $\frac{2.6}{4.0}$ by $\frac{2.1}{4.0}$ inch.

The specimen figured, on the same Plate with *Luscinola melanopogon*, is the adult bird above described.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a, b. Rye, Sussex, September 21st, 1860 (*H. E. D.*). *c, d, ♂.* Oxfordshire (*P. L. Sclater*). *e, f.* Cookham, September 2nd, 1868 (*R. B. Sharpe*). *g, ♂.* Highgate, May 1st, 1869 (*Davy*). *h, ♂.* Highgate, September 24th, 1869 (*Davy*). *i, ♂.* Purley, near Reading, May 4th, 1870 (*R. B. S.*). *k, pull.* Reading (*R. B. S.*). *l, m.* Hampstead, June 1870 (*R. B. S.*). *n.* Pagham, Sussex, July 1870. *o, ♂.* Mezen, N. Russia, June 13th, 1873 (*Piottuch*). *p, q, r, s.* Ural, July 1872 (*L. Sabanäeff*). *t.* Savoy (*Bailly*). *u, ♂.* Near Constantinople, October 16th, 1869 (*Robson*). *v, ♀.* Asia Minor, October 14th, 1866 (*Robson*). *x, ♂.* Turbal, Asia Minor, April 27th, 1871 (*Dr. Krüper*). *y, ♀.* Damietta, Egypt, May 7th, 1863 (*S. Stafford Allen*).

E Mus. H. B. Tristram.

a, b. Castle Eden, Durham (*H. B. T.*). *c, d, ♂.* Gennesareth, Palestine, April 1864 (*H. B. T.*).

E Mus. Howard Saunders.

a, b, ♂. Valencia, Spain, March 20th (*R. Martin*). *c, d, ♀.* Malaga, Spain, July 25th, 1871. *e, f, juv.* Malaga, October (*Rios*).

E Mus. G. E. Shelley.

a. England, August 17th, 1870. *b, ♀.* Nubia, April 11th, 1870. *c, ♂.* Egypt, March 9th, 1871 (*G. E. S.*).

Genus LUSCINIOLA.

- Sylvia* apud Temminck, Man. d'Orn. iii. p. 121 (1835).
Calamodyta apud Bonaparte, Comp. List, p. 12 (1838).
Salicaria apud Keyserling & Blasius, Wirbelth. Eur. p. 55 (1840).
Lusciniola, G. R. Gray, List of Gen. of B. p. 28 (1841).
Cettia apud Gerbe, Dict. univ. d'Hist. Nat. xi. p. 240 (1848).
Caricicola apud C. L. Brehm, Vogelf. p. 236 (1855).
Amnicola apud Gerbe in Degl. & Gerbe, Orn. Eur. i. p. 527 (1867).

So far as I can ascertain, this genus contains only a single species, which differs little from the *Acrocephali* in habits; but it has a much more slender bill, and a tolerably long and well-developed first primary. It inhabits Southern Europe and North Africa, ranging eastward into the Oriental Region. In habits it closely resembles some of the *Acrocephali*, and doubtless also in its nidification; but I have been unable to ascertain any thing very definite on the latter head.

Lusciniola melanopogon, the type and sole representative of this genus, has the bill rather slender, obscurely notched, the nostrils basal, exposed, gape furnished with one or two small bristles; wings rather short, the first primary well developed, considerably longer than the coverts, second slightly shorter than the eighth, the third, fourth, and fifth nearly equal, the third being the longest; tail slightly rounded; under tail-coverts short; tarsi covered in front with four plates and three inferior scutellæ; feet large, the claws strong and considerably curved.

LUSCINIOLA MELANOPOGON.

(MOUSTACHED SEDGE-WARBLER.)

- Sylvia melanopogon*, Temm. Man. d'Orn. iii. p. 121 (1835).
Calamodyta melanopogon (Temm.), Bp. Comp. List, p. 12 (1838).
Salicaria melanopogon (Temm.), Keys. & Blas. Wirbelth. Eur. p. 55 (1840).
Luscinola melanopogon (Temm.), List of Gen. of B. p. 28 (1841).
Cettia melanopogon (Temm.), Gerbe, Dict. univ. d'Hist. Nat. xi. p. 240 (1848).
Caricicola melanopogon (Temm.), C. L. Brehm, Vogelfang, p. 236 (1855).
Caricicola bonelli, C. L. Brehm, ut suprâ (1855).
Amnicola melanopogon (Temm.), Gerbe in Degl. & Gerbe, Orn. Eur. i. p. 527 (1867).
Sylvia bonellii, Naum., fide G. R. Gray, Hand-l. of B. p. 210 (1869).

Fauvette à moustaches noires, French; *Forapaglie castagnolo*, Italian.

Figuræ notabiles.

Temminck, Pl. Col. 245. fig. 2; Werner, Atlas, *Insectivores*, Suppl. pl. 1; Gould, B. of Eur. pl. 111; Roux, Orn. Prov. pl. 233; Shelley, B. of Egypt, pl. 3.

♂ *ad.* *Acrocephalo schænobæno* similis sed pileo ferè omnino nigro-fusco: dorso saturatiore, striâ superciliari albâ, striâ per oculum ductâ conspicuè saturatiore, et gulâ et gutture purè albis: alis et caudâ sicut in *A. schænobæno* picturatis sed remige extimo conspicuè majore: rostro nigro-fusco, ad basin mandibulæ brunneo: pedibus brunneis: iride fuscâ.

♀ *ad.* mari similis, sed coloribus paullo sordidioribus.

Juv. adulto similis, sed dorsi plumis rufescente marginatis et coloribus omnino rufescentioribus.

Adult Male (Egypt, 31st March). Differs from *A. schænobænus* in having the crown black, with only faint traces of brown markings, the back is a trifle more uniform in colour; the eyebrow is broader, and nearly pure white, and the mark through the eye covering the auriculars is very dark; underparts as in *A. schænobænus*, but the chin and throat are rather whiter; wings and tail as in *A. schænobænus*, but the first primary, instead of being very small as in that species, is tolerably long and well developed; bill blackish, the base of the lower mandible brown; legs horn-brown; soles yellowish; iris brown. Total length about 5·25 inches, culmen 0·52, wing 2·2, tail 2·1, tarsus 0·72, first quill 0·3 longer than the coverts, and 0·85 shorter than the second; second 0·2 shorter than the third, which is nearly equal in length with the fourth and fifth.

Young. Resembles the adult; but the feathers on the back have broad rufous edges, and the plumage is in general more rufous in tinge.

THE present species is only met with in Southern Europe, Asia Minor, and North Africa, whence

it ranges eastward into North-west India. Messrs. Degland and Gerbe say (*l. c.*) that it inhabits the south of France, and is occasionally seen in the north. M. Crespon states that it is resident in the Department of Gard, where he has obtained it at all seasons. I do not find any authentic record of its occurrence in Portugal; but Mr. Howard Saunders has received several specimens from Spain, where it is said to be common in the swamps and reed-beds near Valencia. Temminck says that M. Cantraine informed him that it is common in the Italian marshes, frequenting the places where the *Arundo speciosa* grows. He found it in November near Rumbia, in the district of Ragusa, at Ostia, and near Lake Castiglione, where it is very common. It frequents the marshes and the bushes which skirt them, creeps about amongst the foliage, uttering a loud cry, and descends towards the surface of the water, climbing on the aquatic plants; and it may also be seen perched on the rushes. M. Cantraine obtained males in Dalmatia in December, and in the Papal States in November. Salvadori says that it occurs tolerably frequently in Sicily, near Lentini and Mazzara, and is, according to Durazzo, of accidental occurrence in Liguria, according to Perini near Venice; but neither Cara, Hansmann, nor he (Salvadori) observed it in Sardinia; in the Turin Museum, however, is a specimen said to have been obtained there. I do not find it recorded from Greece or Turkey in Europe; but it probably occurs in Asia Minor, and Canon Tristram obtained a single example in Palestine. It is found in North-east Africa; and Captain Shelley, who obtained it there, writes (*B. of Egypt*, p. 93) as follows:—"This Warbler, which is very rare in collections, I found in great abundance among the thick sedge of a lake near Damietta. They keep exclusively to the thick masses of reeds in very marshy districts, and may be seen clinging on to the stems as they take a last peep at the intruder before hiding themselves. They rarely show themselves boldly, but may be watched as they chase each other through the thick and matted sedge, which is seen to move as though a mouse was disturbing it. They creep and flutter along in pursuit of each other, occasionally uttering a little jarring note." Mr. Blanford, who obtained it in Persia, and remarks that examples he obtained there appear to differ in no respect from European specimens, writes as follows:—"Major St. John found this bird in gardens. I met with it amongst high reeds in a marsh. It evidently breeds on the Persian highlands in the spring; but I only observed it in the southern part of the country, perhaps because I had not opportunities for collecting in suitable localities farther north." Mr. W. E. Brooks, C.E., was the first to discover the presence of this Warbler in India, and, as recorded by Canon Tristram (*Ibis*, 1870, p. 301), sent a pair, shot near Etawah, to that gentleman. Since then I have received many examples from Mr. Brooks, all obtained in the same locality; and Mr. A. O. Hume writes (*Stray Feathers*, i. p. 190) respecting its occurrence in Sindh as follows:—"There are dunds, or inland lakes, in Sindh which, looked at even from their margin, appear one waving field of herbage; so dense, close, and even is the growth of a species of rush throughout their whole extent. The fowlers and fishermen have cut through this rush many little narrow channels, just sufficiently wide to admit the passage of a small canoe; and along these alone is it possible to progress at all satisfactorily. The rush rises from two feet six inches to three feet six inches above the surface of the water. . . . These meadow-like broads are the special haunt of the present species, as well as of the Marbled Duck. At best the Moustached Warbler is not a very easy bird to secure; rarely does he disport himself upon the tops of the rushes. As a rule he threads his way rapidly from stem to stem about halfway up, only when

the boat is actually on him making a short, sudden flight, and then, before he is far enough to fire without blowing him to pieces, dropping invisible into the waving sea of rushes.”

But little is known respecting the nidification of the present species; and I have never succeeded in obtaining an authentic nest or eggs for examination and description. Degland and Gerbe say that it nests in the bushes—and that a nest found by M. Lebrun near Montpellier was cup-shaped, and the eggs bluish white, marked with brown dots, chiefly at the larger end; and the description of its nest and eggs given by Salvadori agrees with the above. Four or five is stated to be the number of eggs deposited by this bird.

The specimen figured, on the same Plate with the common Sedge-Warbler (*Acrocephalus schænobænus*), is the adult bird above described, and is in my own collection.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a, ♂. Egypt, March 31st, 1871 (*G. E. Shelley*). *b*, ♀. Damietta, Egypt, March 28th, 1871 (*G. E. S.*). *c*, ♀. Loyah, India, December 17th, 1870 (*W. E. Brooks*). *d*. Etawah, India (*W. E. B.*).

E Mus. Ind. Calc.

a, ♂, *b*, *c*, ♀. Shiraz, Persia. *d*, *e*, *juv.* Asupās, Persia (*W. T. Blanford*).

E Mus. G. E. Shelley.

a, ♂. Damietta, Egypt, February 20th, 1870 (*G. E. S.*). *b*, *c*, ♂, *d*, ♀. Egypt, March 22nd, 1871. *e*, *f*, *g*, ♀. Egypt, March 29th, 1871 (*G. E. S.*).

Genus LOCUSTELLA.

- Motacilla* apud Boddaert, Tabl. des Pl. Enl. p. 35 (1783).
Sylvia apud Latham, Ind. Orn. ii. p. 515 (1790).
Acrocephalus apud J. A. Naumann, Naturg. Land- u. Wasser-Vög. Nachtr. Heft iv. p. 202 (1811).
Muscipeta apud Koch, Baier. Zool. i. p. 166 (1816).
Calamoherpe apud Boie, Isis, 1822, p. 552.
Curruca apud Stephens, in Shaw's Gen. Zool. xiii. p. 213 (1825).
Locustella, Kaup, Natürl. Syst. p. 115 (1829).
Salicaria apud Selby, Brit. Orn. i. p. 199 (1833).
Pseudoluscinia apud Bonaparte, Comp. List, p. 12 (1838).
Sibilatrix apud Macgillivray, Hist. Brit. B. ii. p. 399 (1839).
Cisticola apud Durazzo, Ucc. Lig. p. 35 (1840).
Psithyrædus apud Gloger, Gemeinn. Handb. Naturg. p. 298 (1842).
Luscinopsis apud Bonaparte, Cat. met. Ucc. Eur. p. 36 (1842).
Luscinola apud Bonaparte, Cat. Parzud. p. 6 (1856).
Parnopia apud Blasius, List B. of Eur. p. 11 (1862).
Potamodus apud G. R. Gray, Hand-l. of B. i. p. 210 (1869).
Threnetria apud E. Schauer, J. f. Orn. 1873, p. 161.
Acridiornis apud Severtzoff, Turk. Jevotnie, p. 66 (1873).

IN this genus I have included several species, all of which are said to differ from the other Aquatic Warblers in having a peculiar sibilant grasshopper-like cry, and also in having very long under tail-coverts; and the tendons of the tibial muscles are strongly ossified. Their eggs are also somewhat different from those of the other Aquatic Warblers. The Grasshopper-Warblers occur in the central, north central, and southern parts of the Palæarctic Region, as also in the Indo-Malayan and Ethiopian Regions. Five species are found within the limits of the Western Palæarctic Region, four of which breed regularly within its limits, but the fifth (*Locustella certhiola*) is only a rare straggler from the Eastern Palæarctic Region.

In habits the *Locustellæ* assimilate closely to the other Aquatic Warblers; for they frequent marshy and reed-covered localities, being found in dense reed thickets; but they are also not unfrequently to be met with in dry bush-covered places as well as near water. The note of these birds is peculiar, being very similar to that of a grasshopper or mole-cricket, but much louder. They do not, as a rule, place their nest amongst aquatic herbage, but on the ground amongst tangled brushwood, where it is carefully concealed amongst the grass; and the eggs, from four to six in number, are reddish white, closely freckled with red or pale reddish brown.

Locustella naevia, the type of the present genus, has the bill moderately long, straight, rather broader than high at the base, compressed towards the end; nostrils basal, oval, placed in the fore part of the nasal membrane, which is feathered behind; wings rather short, pointed, first quill very short and small, the second and third longest, and nearly equal; tail long, broad, graduated, under tail-coverts very long; tarsus long, covered in front with four plates and three inferior scutellæ; toes compressed, the hind toe large, claws moderate, curved; plumage soft, blended, the upper parts spotted.



GRASSHOPPER WARBLER.
LOCUSTELLA NÆVIA

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LOCUSTELLA NÆVIA.

(GRASSHOPPER WARBLER.)

- The Grasshopper Lark*, Penn. Brit. Zool. ii. p. 240 (1768).
La Locustelle, Montb. Hist. Nat. Ois. v. p. 328 (1778).
La Fauvette tachetée, D'Aubenton, Pl. Enl. 581. fig. 3 (1778, nec Buff.).
Motacilla nævia, Bodd. Table des Pl. Enl. p. 35. no. 581 (1783).
Sylvia locustella, Lath. Ind. Orn. ii. p. 515 (1790).
Muscipeta locustella (Lath.), Koch, Baier. Zool. i. p. 166 (1816).
Muscipeta olivacea, Koch, tom. cit. p. 167 (1816).
Acrocephalus fluviatilis, J. A. Naum. Vög. Deutschl. pp. 192, 202, & 342 (1819, nec Wolf).
Calamoherpe locustella (Lath.), Boie, Isis, 1822, p. 552.
Curruca locustella, Steph. in Shaw's Gen. Zool. xiii. p. 213 (1825).
Locustella, Kaup (*Sylvia locustella*, Lath.), Natürl. Syst. p. 115 (1829).
Calamoherpe tenuirostris, Brehm, Vög. Deutschl. p. 400 (1831).
"Locustella avicula, Ray," Gould, B. of Eur. pl. 103 (1831).
Salicaria locustella (Lath.), Selby, Brit. Orn. i. p. 199 (1833).
"Locustella rayi, Gould," Bp. Comp. List, p. 12 (1838).
Sibilatrix locustella (Lath.), Macgilliv. Hist. Brit. B. ii. p. 399 (1839).
Psithyrædus, Gloger (*Sylvia locustella*, Lath.), Gemeinn. Handb. Naturg. p. 298 (1842).
Locustella nævia (Lath.), Degl. Orn. Eur. i. p. 589 (1849).
Locustella anthirostris, L. Brehm, Naumannia, 1855, p. 284.
Parnopia locustella (Lath.), Blas. List B. of Eur. p. 11 (1862).
Locustella vera major, A. E. Brehm, Verz. Samml. C. L. Brehm, p. 6 (1866).
Locustella vera fruticeti, A. E. Brehm, ut suprâ (1866).
Locustella vera tenuirostris, A. E. Brehm, ut suprâ (1866).
Locustella vera anthirostris, A. B. Brehm, ut suprâ (1866).

Grasshopper Warbler, *Cricketbird*, *Brakehopper*, English; *Bec-fin locustelle*, French; *Busch-Rohrsänger*, *Heuschreckensänger*, German; *de Sprinkhaan-zietzanger*, Dutch; *Busksanger*, Danish; *Forapaglie macchiettato*, Italian.

Figuræ notabiles.

D'Aubenton, *l. c.*; Werner, Atlas, *Insectivores*, pl. 24; Kjærb. Orn. Dan. taf. 22*a*; Fritsch, Vög. Eur. taf. 18. fig. 4; Naumann, Vög. Deutschl. taf. 83. figs. 2, 3; Gould, B. of Eur. pl. 103; id. B. of G. B. ii. pl. lxxviii.; Roux, Orn. Prov. pl. 229.

♂ *ad.* corpore suprâ olivascanti-brunneo, nigricante brunneo guttato: remigibus et tectricibus alarum saturatè brunneis pallidè olivascante brunneo marginatis: caudâ rotundatâ saturatè brunneâ: mento et gulâ

cum abdomine albis: capitis lateribus pallidè brunneis: pectore et hypochondriis pallidè brunneis vix rufescente tinctis: subcaudalibus elongatis centraliter saturatè brunneo notatis: rostro brunneo: pedibus pallidè brunneis: iride brunneâ.

♀ haud a mare distinguenda.

Juv. adulto similis, sed maculis in corpore suprâ magis notatis et gutture cum pectore maculis minutis punctatis.

Adult Male (Saxony, May). Upper parts olive-brown, spotted with blackish brown, almost each feather having a dark blackish brown centre; quills and wing-coverts dark brown with light olive-brown margins; tail dark olive-brown, much rounded; chin white, gradually darkening on the throat into pale brown; sides of the head pale olive-brown; breast and flanks pale olive-brown with a rufous tinge on the breast; abdomen white; under tail-coverts very long, pale brown, with dark brown central streaks; bill dark brown; legs light brown; iris brown. Total length about $5\frac{1}{2}$ inches, culmen 0.55, wing 2.45, tail 2.25, tarsus 0.8, first primary very short, about equal to the wing-coverts, second and fourth equal, the third being a trifle longer.

Female. Undistinguishable from the male.

Young (Gateshead-on-Tyne, 10th June). Resembles the adult, but has the dark markings on the upper parts much more strongly developed, and the throat and upper part of the breast are marked with small dark brown spots.

Nestling (Gateshead, 12th June). Upper parts rich olive-brown, with a rufous tinge, almost unspotted; underparts dull sulphur-yellow, darkening to brown on the flanks.

THE Grasshopper Warbler inhabits Central Europe, not ranging into Scandinavia, but occurring as far north as Scotland in the summer season, and found eastward probably into Asia; but how far it is met with there is at present doubtful.

In Great Britain it is, though local in its distribution, and owing to its shy habits difficult to discover, by no means very rare, and breeds in almost every county in England. In Scotland, according to Mr. Robert Gray (B. of W. of Scotl. p. 89), it is "apparently more local in its distribution, with the exception, perhaps, of the Lesser Whitethroat, than any other of the Scottish Warblers. It has been traced from the Solway Firth to the Firth of Forth on the east side as a regular visitor, and from Wigtownshire to Loch Lomond on the west. It is also found in some of the midland counties; but I have not been able to trace the migration of the species to a more northern limit than Bonaw, near Oban, Argyllshire. In the Loch-Lomond district it is not uncommon above Tarbet, in a plantation of young larch trees, at an elevation of five or six hundred feet above the level of the loch." In Ireland, according to Thompson (B. of Irel. i. p. 179), it "is probably a regular summer visitant to suitable localities from south to north. Montagu states that he has found this bird in Ireland (Orn. Dict.); and Templeton remarks that it is 'not very uncommon during spring and summer,' which observation is meant to apply to the neighbourhood of Belfast. In M'Skimmin's 'History of Carrickfergus' it is remarked that this Warbler 'inhabits thickets and close hedges, and makes a noise in the summer evenings resembling the winding up of a clock, or call of the common grasshopper.' For many years birds considered, from their very peculiar note, to be of this species were occasionally heard and

seen (but the latter very rarely, and only for a moment) around Belfast—in the counties of Down and Antrim—by my ornithological friends and myself. But no specimen killed either here or anywhere in Ireland—guns being laid up at the time of the bird's sojourn with us—came under my examination until the 25th of July, 1839, when my friend Richard K. Sinclair, Esq., brought me an adult one which he had shot on the preceding evening at the falls; its stomach was filled with coleopterous insects."

It does not appear ever to have been met with in Sweden, Norway, or Finland; but it will doubtless be found to occur in the eastern portion of the last-named country, as Mr. Meves saw a pair at Andoma, near Lake Onega, in June. In Central Russia, Mr. Sabanäeff informs me, it is commoner than either the Reed- or Sedge-Warbler, more especially in the provinces of Moscow and Jaroslaf, and in the Ural it ranges as far north as Pavda. As below stated, Mr. Sabanäeff obtained *Locustella hendersoni* in the Southern Ural, where possibly both species occur. He met with it in the Tagiliska Dacha; and in the black-earth plains it is, he says, numerous amongst the birches which skirt the shores of the rivers and lakes. It occurs in Poland; but I am without any notes from my friend Mr. Taczanowski respecting its distribution in that country. In North Germany Borggreve speaks of it as being a regular summer visitant, numerous on the Elbe and its tributaries, but rare in other localities. Mr. Hintz found it breeding near Cöslin, in Pomerania, and says that he has obtained its eggs there every season; and it appears to breed in several other localities in North-eastern Germany. Mr. A. von Homeyer gives (*J. f. O.* 1869, pp. 61–66) some careful details respecting its range in Germany during the summer season, from which it appears that he met with it in Pomerania (Neu-Vorpommern), Frankfort-on-the-Main, Rastatt, in Baden, Gross-Glogau, in Lower Silesia, in Posen, at Münsterberg, in Silesia, in the county of Glatz, at Breslau, and at Görlitz, in Ober-Lausitz. It occurs northward into Denmark, where, according to Kjærbølling, it is a very rare summer visitant, arriving in May and leaving in August. According to Mr. Mecklenburg it occurs in Schleswig, and breeds at Flensburg; and Mr. E. Hage says that it breeds at Kiel. As previously stated, it is said to be common on the Elbe; and Dr. Rey says that he frequently saw it from the end of April to the commencement of June at Halle, but never found its nest there. It breeds, however, in Dessau. Mr. R. Blasius speaks of it as being rare in Brunswick, where it frequents the lowlands; and it is found, though rarely, in the countries bordering the Rhine. It occurs, Mr. Sachse informed me, annually near Altenkirchen, in the Coblenz district; but its nest is seldom found there. When I was there Mr. Sachse showed me several eggs which he had himself taken there, one nest being on a hill close to a wood near that town, at a considerable distance from water. This nest was on the ground amongst the bramble bushes; a second was in the heath amongst thinly standing wood-growth, and a third in the rushes in a swampy district, the eggs in the last being strongly incubated. When discovered the female sat so close that she was caught on her eggs, and let loose. On leaving the nest and returning again after about twenty minutes' interval she was again found on the nest, and a second time caught. Mr. Sachse wanted a specimen for his collection, but could not decide to kill her, and let her go again.

In Belgium, according to Baron De Selys-Longchamps, it is a rare and accidental visitant; and De la Fontaine says that he never obtained but one specimen in Luxemburg. In Holland it is found during the summer, arriving late in April and leaving in September; and, according

to Professor Schlegel, it occurs most frequently in the neighbourhood of Haarlem. Messrs. Degland and Gerbe state that it is found throughout France in the summer season, being especially common in Brittany. Professor Barboza du Bocage records it from Portugal; Mr. Howard Saunders has obtained it from Malaga, in Spain, where, he says, it remains throughout the winter; and Dr. A. E. Brehm shot a specimen in September at Murcia.

Passing eastward, again, I find it recorded by Bailly as not unfrequent in moist localities in Savoy. In Italy it appears to be rare, rather less so in the north, where Salvadori obtained it in September. Bettoni asserts that it breeds in Lombardy, but does not figure it; and Savi only records one instance of its capture in Tuscany. Professor Doderlein states that neither Cav. L. Benoit nor any other ornithologist has as yet been able to obtain it in Sicily; and the only authority for its occurrence is the very doubtful one of Malherbe. I do not find any record of its occurrence in Greece; but it is found in Southern Germany, though it appears to be nowhere common. Dr. A. Fritsch (J. f. O. 1871, p. 195) says that it is rare in Bohemia. He obtained a specimen at Lidic, near Schlau; and Mr. Lokaj purchased three live birds at the bird-market in Prague. There is, he says, a specimen in the Museum at Frauenberg. The Ritter von Tschusi-Schmidhofen informs me that "both old and young examples have been killed near Vienna, and it has been observed in that part of Austria by Professor Jeitteles. Hanf says that it is rare in Styria, being only met with during migration. He obtained a specimen in August 1866, near Mariahof, which had fourteen tail-feathers, the central ones being twice the length of the outermost. Seidensacher found it commonly in Croatia, especially near Trebec, frequenting meadows and the high grass in the woodlands. It arrives at Siebenbürgen late in April, and leaves in September, and appears to breed commonly in Galicia." In Southern Russia it occurs but rarely, but may very possibly have been overlooked in some localities; Von Nordmann says that though he often heard its note on the banks of the Dnieper and the Bug, he only once obtained a specimen. It has not been obtained in Asia Minor, so far as I can learn; nor did Dr. Krüper observe it there, though he says (J. f. O. 1869, p. 37) that he believes that it occurs near Smyrna during migration. It has been stated to occur in North-east Africa; but observations made by later travellers and collectors tend to show that the present bird is not found there, and it is not improbable that *Locustella fluviatilis* has been mistaken for the present species. *Locustella nævia* is, however, found in Algeria, where, according to Loche, it is scarce and local; and Mr. C. F. Tyrwhitt Drake, in his article on the ornithology of Tangier and Eastern Morocco (Ibis, 1867, p. 427), says that he shot it in March.

The present species does not, I should say, range further eastward than the Ural, where it meets with its eastern ally, which I consider a clearly distinct form from our common European species. This eastern form (*Locustella hendersoni* (Cassin), Proc. Acad. Philad. 1858, p. 194) differs in being smaller in size and much clearer in colour, having the markings on the upper parts much more clearly defined. The average size of my specimens of *L. nævia* is—culmen 0.586 inch, wing 2.466, tail 2.316, tarsus 0.8; whereas that of *Locustella hendersoni* is—culmen 0.543, wing 2.26, tail 2.133, tarsus 0.783. That *Locustella hendersoni* is found within the limits of the Western Palæarctic Region is certain, as Mr. Sabanäeff has sent me a specimen from Ekaterinbourg labelled *Salicaria locustella*, which is clearly identical with Indian specimens, and has even a shorter wing than any other example of *L. hendersoni* in my collection.

In its habits the present species is extremely shy, and is therefore considered far less numerous than it really is in some localities. That it cannot be uncommon near Gateshead-on-Tyne, in North England, may be inferred from the fact that my friend Mr. A. W. Johnson of that town sent to me fifteen nests of eggs obtained in one season. It is, however, eminently an unobtrusive and quiet bird, frequenting bush-covered localities, both in swampy as well as in dry places; and I have known it to occur amongst scrubby bush-growth on sandy, dry hillocks. It may always be best recognized by its peculiar grasshopper-like note, from which its name is derived. Macgillivray, speaking of its note and habits, says that he "had almost daily opportunities of hearing the singular note of this interesting bird, which is nowhere perhaps more abundant than in the neighbourhood of Norwich, where I saw it alive for the first time. While on my botanico-entomological ramblings, I was often surprised by a very remarkable cry which I frequently heard, apparently coming from the hedges skirting the road, and went to the spot in hopes of discovering some large species of grasshopper, or, may be, a mole-cricket or similar insect, but without success. The note, if once heard, can never be afterwards mistaken for the sound of a grasshopper or cricket, however striking the resemblance; besides, the length of time for which it is continued, provided the bird be not disturbed, is much greater. Thus, on one occasion, while watching some pike-lines, by the margin of a deep pool, I heard the trill of the Grasshopper Chirper emitted from a neighbouring hedge for at least twenty minutes, during which time the bird appeared to have been sitting on the same spot. I cannot state the period of the arrival of this bird in the eastern counties; but I observed it as late as the end of September, up to which period I regularly saw and heard my little friends in a lane through which I passed every second day on my way to the bath-house at Heigham. Although it frequents hedges alone, in so far as I have observed, I once heard two crying in the gardens attached to the Bishop's palace at Norwich. It seldom perches on trees; but I have occasionally heard its curious cry apparently emanating from the elms in the hedge-rows, and have more than once seen it in the same situation. In all its actions, and in some measure in the choice of its abode, it much resembles the Sedge-Warbler (*Calamoherpe phragmitis*)—so much so that to-day, 1st June, on seeing some of that species skulking in a hedge near Edinburgh, I at first fancied that I again saw my Norfolk friends, and almost regretted that the procuring of a specimen put an end to the illusion. On Costessay Common, a few miles from Norwich, I never met with it, although it is abundant in all the neighbouring hedges, so much so that on a fine evening, I have at one time listened to at least a dozen, and have heard their cries even until the Goat-sucker and the Bat flitting about on noiseless wings announced the close of day. A stone thrown into the hedge causes its inhabitants to renew their cry; for song it cannot be called. I have never heard any other notes uttered by this bird than that single one which has procured for it in the neighbourhood the name of Cricket bird, from its similarity to the sound produced by the Mole Cricket (*Gryllotalpa vulgaris*), and indeed of many grasshoppers, although much louder. It has been related that the Grasshopper Chirper possesses the power of ventriloquism, in common with the Corncrake. This, however, I much doubt, as by merely lowering and raising the voice, and at the same time turning the head in various directions, the alleged ventriloquism might easily be produced. When on the ground (which, however, it seldom is, unless at the root of a hedge or thicket, where it is sufficiently protected), it advances by a sort of shuffling

movement, somewhat like that of the Hedge-Chanter (*Accentor modularis*), although in activity it far surpasses that bird. In fact, it is continually in motion; and so much does it trust to its powers of concealment for protection, that I have several times in walking slowly along a narrow lane driven the bird along for some distance, all the while emitting its note, and keeping only a few yards in advance, yet so well hidden that it was only at intervals that a glimpse could be got of the tiny creature, which I would now and then observe on the opposite side of the hedge. Almost the only time that I saw it fairly on wing was under the following circumstances:—In one of the beautiful lanes near Costessay a large Dragonfly (*Libellula depressa*) had alighted on a hedge, when, as I was stealing up to capture it, a Grasshopper Chirper flew from the opposite hedge, about twelve feet distant, and pounced upon the insect, which, however, managed to escape, although only to be presently caught by its other pursuer. It could not have been for the purpose of destroying so large an insect for food that the bird made this attack; and yet I have seen on the Braid Hills a still larger Dragonfly (*Æshina grandis*) pursued in like manner by a Pipit (*Anthus pratensis*), which made several pounces at it, but without effect.”

Mr. C. Fickert, who kept the present species in confinement, says (J. f. O. 1870, p. 439) that his bird often had a drop of clear crystal-like fluid at the tip of its beak, which he took for a drop of water, but more careful observation showed that it was nothing more or less than spittle, probably an excess of fluid spittle, which he believes is a necessity owing to the extremely prolonged note of the bird; and he further remarks that he once counted 127 successive notes, without intermission, uttered by one of these birds.

The Grasshopper Warbler places its nest on the ground, carefully concealed in the grass and herbage or amidst tangled brushwood. The nest is cup-shaped, carefully and strongly constructed of grass bents intermixed with moss and, in some nests, a few leaves, and lined with finer bents. The eggs, usually five or six, but rarely seven in number, are white, with a rosy tinge, minutely spotted with reddish brown, the markings being in some dispersed over the surface of the shell, and in others collected at, or in a ring round the larger end. In size they vary from $\frac{2.9}{4.0}$ by $\frac{1}{2}$ inch to $\frac{3.0}{4.0}$ by $\frac{2.2}{4.0}$ inch.

The specimens figured are the adult male and young bird described, and are in my collection.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a, ♂, *b*, ♀. Gateshead, England, June 10th, 1871 (*A. W. Johnson*). *c*. Europe (*Troughton*). *d*, ♂. Saxony, May 1870 (*W. Schlüter*). *e*, pull., *f*, pull. Gateshead, England, June 12th, 1871 (*A. W. Johnson*).

E Mus. Howard Saunders.

a, ♂, *b*, ♀. From nest, near Newcastle, May 1866 (*R. Greenwell*). *c*, ♂. Pomerania, July. *d*, ♀. Malaga, October 16th. *e*, ♂. Malaga, October 24th. *e*, juv. Malaga, November 9th. *f*, ad. Granada.

E Mus. Salvin and Godman.

a. Middlesex, 1855. *b*, ♀, *c*, ♀, *d*, ♂. Wicken Fen, Cambridgeshire, 1856 (*P. Godman*). *e*. Cambridgeshire, June 1856 (*Baker*). *f*, ♂, *g*, ♂. Wicken Fen, June and July 1856 (*O. Salvin*).



Female in

Mintern Bros imp

1. RIVER WARBLER.
LOCUSTELLA FLUVIATILIS.
2. LANCEOLATED WARBLER.
LOCUSTELLA LANCEOLATA

LOCUSTELLA LANCEOLATA.

(LANCEOLATED WARBLER.)

- Sylvia lanceolata*, Temm. Man. d'Orn. iv. p. 614 (1840).
Cisticola lanceolata (Temm.), Durazzo, Ucc. Lig. p. 35 (1840).
Salicaria lanceolata (Temm.), Schlegel, Rev. Crit. p. 30 (1844).
Calamodyta lanceolata (Temm.), Bp. Consp. Gen. Av. p. 287 (1850).
Locustella lanceolata (Temm.), Bp. Cat. Parzud. p. 6 (1856).
Lusciniopsis hendersonii, Cass. Proc. Phil. Ac. Sc. 1858, p. 194.
Locustella allied to *L. raii*, Swinhoe, Ibis, 1861, p. 412.
Salicaria locustella, var. *lanceolata*, Radde, Reis. im Süd. v. Ost-Sib. ii. p. 266 (1862).
Locustella minuta, Swinhoe, P. Z. S. 1863, p. 93.
Lusciniola lanceolata (Temm.), G. R. Gray, Hand-list, i. p. 210. no. 2970 (1869).
Acridiornis lanceolata (Temm.), Severtzoff, Turk. Jevotnie, p. 66 (1873).
Locustella subsignata, Hume, Stray Feathers, i. p. 409 (1873).

Figura unica.

Meves, Öfv. Vet. Ak. Förh. 1871, pl. xiv.

♂ *ad.* corpore suprâ saturatè grisescenti-olivaceo ubique nigro-fusco striato: remigibus saturatè fuscis, in pogonio externo grisescente fulvido marginatis, secundariis intimis, scapularibus et tectricibus alarum nigro-fuscis pallidè grisescente olivaceo marginatis: supracaudalibus dorso concoloribus, caudâ saturatè olivascente fusco indistinctè fasciatâ, rectricibus omnibus vix pallidiore marginatis: corpore subtùs albo, vix flavicante cervino lavato: gutture, pectore et hypochondriis nigro-fusco striatis: capitis lateribus pallidè olivascenti-griseis olivaceo notatis, striâ supraoculari albidâ: hypochondriis brunnescente olivaceo lavatis: subcaudalibus rufescenti-cervinis, majoribus immaculatis, minoribus medialiter vix fusco striatis: rostro nigricanti-corneo, ad basin mandibulâ flavicante: pedibus flavicantibus, iride fuscâ.

♀ *vix a mare distinguenda*, paullo minor, gulâ et gutture minus striatis.

Adult Male (Lake Baikal, Siberia, 16th June). Upper parts dark olive-grey, broadly striped with black, the centres of the feathers being of that colour; on the crown the stripes are very clearly defined, forming four very distinct ones from the base of the bill to the nape; quills dark brown, edged with dull light fulvous greyish margins, inner secondaries, scapulars, and wing-coverts blackish brown, with light olive-grey margins; upper tail-coverts like the back; tail dark olive-brown, with lighter margins to the feathers, and very indistinctly barred; underparts white, with a slight yellowish tinge, on the throat, breast, and flanks marked with rather narrow, but very clearly defined, black lines, the chin being but slightly striped; sides of the head pale olive-grey, marked with darker olivaceous; over the eye is a whitish streak; flanks washed with brownish olivaceous; under tail-coverts rufous buff, the larger ones unmarked, and the smaller ones with an indistinct central dark line; bill blackish horn, at the base of the lower mandible pale yellowish; legs pale yellowish flesh; iris rich brown. Total length

about 4·5–5 inches, culmen 0·5, gape 0·55, wing 2·2, tail 1·83, tarsus 0·7; first primary scarcely longer than the primary coverts, second rather longer than the fourth, third longest, being, however, only 0·05 inch longer than the second.

Adult Female (Lake Baikal, 16th June). Resembles the male, but has the throat rather less striped, and is smaller in size, measuring—wing 2·0, tail 1·7, tarsus 0·7.

Obs. A specimen from China, sent to me by Mr. Swinhoe, is apparently in winter dress, and has the edges to the feathers on the upper parts much broader, and the underparts are much less striped, than in the specimens above described.

For long there existed some doubt respecting the propriety of including the present species in the European list, and many naturalists have gone so far as to consider it a mere variety of the common Grasshopper-Warbler. Previous to 1869 the only instances on record of its having been obtained in Europe were:—that recorded by Temminck, who states (*l. c.*) that the specimen described by him was sent to him by Mr. Bruch, of Mayence, and was obtained not far from that town; and Durazzo (*l. c.*) states that one was taken on the ramparts of Genoa. This latter record of its occurrence in Italy is somewhat called in question by Salvadori, who only refers to it in a footnote in his work on the birds of Italy, and does not include this species as an Italian bird; and as regards the specimen said by Temminck to have been obtained at Mayence, Malherbe writes (*Faune Orn. de la Sicile*, p. 67) as follows:—“It is an error on the part of M. Temminck to state that this species was killed near Mayence; for I am informed by Mr. Bruch that the two specimens in his collection, one of which was the bird sent to M. Temminck, were given to him by one of the Professors at the University of Bonn, who received them from Russia without any particulars as to locality.” From the above it will be seen that both the instances of its reputed occurrence previous to 1869 are open to grave doubt. In 1869, however, Mr. Meves, the well-known Swedish collector, visited Northern Russia in order to collect birds, and there shot an undoubted specimen of the present species on the river Onega. This gentleman writes (*Öfv. K. Vet. Ak. Förh.* 1871, p. 749) as follows:—“During my boat-journey down the Onega river, near Posad, I heard about midnight, on the 9th July, a lively and continuous song of a Grasshopper-Warbler, which was in a neighbouring morass covered with low bushes and marsh-herbage. I went on shore; and though it was not very light, I succeeded ere long in catching sight of the bird, seated on a stump, and shot it. On picking it up I was astonished and delighted to find a bird entirely new and unknown to me, and am sure that had either Pastor Brehm or Professor Blasius, like me, a fresh-killed bird in their hands, they would never have dreamt of considering it to be a *Calamoherpe locustella*. . . . When in St. Petersburg I had an opportunity of comparing my specimens with one shot by Dr. Radde in Mongolia, on the 21st May, 1856, and found that they agreed closely, except that the latter was lighter, and the striations on the underparts were not so clearly defined or large. Another specimen, in the St.-Petersburg Museum, from Jakutsch, obtained 29th May, 1844, closely resembles Dr. Radde's bird, but has a rather stouter and longer (15 millims.) bill and a shorter tail.” Beyond these details I can find no record of its occurrence in Europe, as it is an Asiatic species, being met with as far east as Dauria and China. Baron J. W. von Müller writes

(J. f. O. 1855, p. 199) that it undoubtedly occurs in Egypt; but as he gives no instance of its ever having been obtained there, and I can find no other notice of its having been procured by the various naturalists who have collected in Egypt, I certainly doubt the truth of this statement. Severtzoff met with it in Turkestan, where, he writes (*Turkestanskije Jevotnie*, p. 66), it inhabits the northern portions of that country, and breeds in the mountains of Karatau, at an altitude of from 6000 to 8500 feet. He does not, however, give any notes on its nidification. Both Dr. Radde and Dr. Dybowski met with it in Eastern Siberia. The former gentleman writes (*l. c.*) that it occurs at Orenburg, in the Stanovoi Mountains, at Wilui, and in Mongolia. He first observed it at Tarei-nor about the 21st May; and during the autumn passage he again obtained it, on the 16th August, when it was tolerably numerous, and most generally met with at some freshwater pools near the village of Kulussutajeffsk. Dr. Dybowski, who says that it is not common either near Kultuk or in Darasun, states that it arrives about the middle of June, and remains there to breed. In the winter season it is met with in Japan and China, and has been obtained as far south as the Andaman islands. Professor Cassin's *Luscinia hendersoni*, founded on a specimen obtained at Hakodadi, in Japan, is undoubtedly referable to the present species, as a perusal of his description at once shows. Mr. Swinhoe records it (P. Z. S. 1871, p. 355) from Amoy, Canton, and, according to Père David, from Pekin. It was obtained on the Andamans, in the neighbourhood of Aberdeen, Port Blair, by Mr. Davison, who writes (*Stray Feathers*, i. p. 409), "I found this little *Locustella* frequenting the same places as *Cyanecula cærulecula*, Pall., viz. the dense scrubby weed growing about the dried-up paddy-fields; I also, on two occasions, saw it in a garden, in a patch of beans; and once I flushed it from a patch of sugar-cane. It is an awful little skulk, and will let itself be almost trodden upon before it will rise. It makes its way rapidly through the tangled weeds, and runs along the ground in a truly surprising manner; in walking through the weeds I have on several occasions seen this little bird start up and run rapidly along the ground. I am unable to say whether it is a permanent resident at the Andamans or not; I only met with it for the first time soon after my return to Port Blair from the Nicobars." It was also obtained in the Andamans by Lieut. R. Wardlaw Ramsay in April, as recorded by Lord Walden (*Ibis*, 1874, p. 139).

Respecting the habits and nidification of this species I find scarcely any thing on record. It bears considerable affinity to our common Grasshopper Warbler, and, like that species, most frequently inhabits marshy localities where there is plenty of underwood, and consequently good shelter. I have never seen its nest or eggs, though some have, I believe, been sent to Europe by Dr. Dybowski, who, according to Mr. Taczanowski (*J. f. O.* 1872, p. 356), says that in Darasun it breeds in damp meadows, amongst the high grass or under low bushes, and that its eggs resemble those of our common Grasshopper Warbler, but are somewhat smaller in size.

The specimen figured, on the same Plate with *Locustella fluviatilis*, is an adult male from the southern portion of Lake Baikal, and is in my collection.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a, ♂, *b*, ♀. Southern portion of Lake Baikal, June 16th, 1870 (*Dr. Dybowski*). *c*. Chefoo, China (*R. Swinhoe*).

E Mus. Lord Walden.

a. South Andaman, April 9th, 1873 (*R. Wardlaw Ramsay*).

E Mus. H. B. Tristram.

a, ♂. Lake Baikal (*Dr. Dybowski*). *b*, ♀. Amoy, winter (*R. Swinhoe*).

LOCUSTELLA FLUVIATILIS.

(RIVER-WARBLER.)

- Sylvia fluviatilis*, Wolf, Taschenb. deutsch. Vogelk. i. p. 229.
Acrocephalus stagnatilis, J. A. Naumann, Vög. Deutschl. Nachtr. p. 202, taf. 26. fig. 23 (1819).
Calamoherpe fluviatilis (Wolf), C. L. Brehm, Vög. Deutschl. p. 438 (1831).
Locustella fluviatilis (Wolf), Gould, B. of Eur. pl. 102 (1836).
Salicaria fluviatilis (Wolf), Keys. & Blas. Wirbelth. Eur. pp. liii & 180 (1840).
Lusciniopsis fluviatilis (Wolf), Bp. Cat. met. Ucc. Eur. p. 36. no. 152 (1842).
Locustella strepitans, C. L. Brehm, Vogelfang, p. 233 (1855).
Locustella wodzickii, C. L. Brehm, tom. cit. p. 234 (1855).
Calamodyta fluviatilis (Wolf), V. Müller, J. f. Orn. 1855, p. 198.
Lusciniopsis fluviatilis strepitans, A. E. Brehm, Verz. Samml. C. L. Brehm, p. 6 (1866).
Lusciniopsis fluviatilis alticeps, A. E. Brehm, ut suprâ.
Lusciniopsis fluviatilis macrorhynchos, A. E. Brehm, ut suprâ.
Lusciniopsis fluviatilis macroura, A. E. Brehm, ut suprâ.
Pseudoluscinia fluviatilis, Wolf, Tristram, Ibis, 1867, p. 77.
Potamodus fluviatilis (Wolf), G. R. Gray, Hand-list of B. i. p. 210. no. 2971 (1869).
Threnetria fluviatilis (Wolf), E. Schauer, J. f. Orn. 1873, p. 161.
Locustella cicada, Hansmann, J. f. Orn. 1873, p. 432.

Bec-fin riverain, French; *Fluss-Sänger, Rohrschirf, grosser Schwirl*, German.

Figuræ notabiles.

Savigny, Descr. de l'Égypte, pl. xiii. fig. 3; J. A. Naumann, Vög. Deutschl. taf. 26. fig. 23; J. F. Naumann, taf. 83. fig. 1; Gould, B. of Eur. pl. 102; Fritsch, Vög. Eur. taf. 18. fig. 1.

♂ *ad.* corpore suprâ olivascenti-brunneo, caudâ vix rufescente tinctâ: capitis lateribus pallidioribus, a rostro per et infra oculos striâ indistinctè sordidè cervinâ: corpore subtùs albo, pectore et hypochondriis pallidè brunneo lavatis: gutture brunneo striato: subcaudalibus elongatis pallidè brunneis, albido marginatis: remigibus et rectricibus saturatè brunneis: rostro brunnescenti-corneo, ad basin mandibulæ sordidè flavicante: pedibus sordidè carnis: iride fuscâ.

♀ *ad.* haud a mare distinguenda.

Adult Male (Silesia). Upper parts uniform dark olive-brown, with a slight rufous tinge on the tail, sides of the head rather paler; underparts white on the breast, and flanks washed with dull brown from the base of the bill, passing through and behind the eye an indistinct light mark; throat marked with dull brown stripes, each feather having a dark centre, which is narrow towards the base, but increases in width towards the tip of the feather; these stripes become blurred on the lower throat, and gradually

merge into the brown on the upper breast; under tail-coverts very long, pale brown, with broad whitish tips; wings similar in colour to the rest of the upper parts, without the olive tinge, except on the outer margins of the quills; first primary very short, nearly 0·2 inch less than the primary coverts, and 1·8 shorter than the second, which is the longest, the latter being 0·15 shorter than the third; bill horn-brown, dull yellowish at the base of the lower mandible; legs dull flesh-colour; iris dark brown. Total length about $5\frac{1}{2}$ inches, culmen 0·52, gape 0·55, wing 2·9, tail 2·5, tarsus 0·85.

Adult Female (*fide* Schauer). Resembles the male so closely that it is impossible to distinguish it with any degree of certainty; but, as a rule, she is rather duller-coloured than the male, and the stripes on the throat are less clearly defined.

Young. Resembles the adult bird, but lacks the stripes on the throat.

So far as is now known, the range of this species is somewhat restricted; for it is only known to occur in Central and Southern Europe during the summer, and it winters either in Southern Europe or North Africa; but, owing to its extremely secretive habits, it may easily be overlooked. It has never been met with in Great Britain, nor yet in Sweden or Norway, but has once occurred in Finland. Professor Malmgren, in a letter to 'The Ibis' (1870, p. 148), says that he obtained a specimen of this bird killed by Dr. L. M. Runeberg near Borgå, about twenty miles (English) to the east of Helsingfors, on the 24th June, 1869. It has been found in Northern Russia by Mr. Meves, who writes (Öfv. k. Vet. Ak. Förh. 1871, p. 747) that he first met with it on the 4th June on a small island called Ptino-Ostroff, in Lake Ladoga, where it appeared to be by no means uncommon, as he heard five or six males singing. He shot two, but blew one in pieces. On the journey along the canal to Sermarks, on Lake Onega, and in several other localities he heard its song, especially in the evening, and even all night through. Mr. Sabanäeff informs me that he has twice met with it near Jaroslaf, and that it is somewhat oftener met with in the Government of Moscow. Bogdanoff occasionally saw it at some distance from the Volga, in the southern Kama and its tributaries, in the Kazan and Smolensk Governments. Kessler met with it in the Kieff Government and near Poltava; and it probably occurs throughout Southern Russia. Mr. Sabanäeff himself only observed it in the Kaslinsk Ural. In Poland it is, Mr. Taczanowski informs me, generally distributed in suitable localities. Borggreve (Vogelf. Nord-D. p. 90) speaks of it as being "a rare visitant from the south-east;" but it appears to occur in several parts of Germany, and he subsequently (J. f. O. 1871, p. 222) writes that, according to Dr. Zaddach, it is "tolerably" common in the well-known Elchwildrevier Ibenhorst, in East Prussia. Dr. Hansmann writes (J. f. O. 1873, p. 432) that he heard a Warbler near Berlin which he is certain could not be the Grasshopper-Warbler, and which he puts down as the present species; but as he neither shot nor even appears to have distinctly seen a specimen, and was evidently not well acquainted with the song of the River-Warbler, it may certainly be doubted whether the bird he heard really was the present species. I do not find any instance of its occurrence in Holland, France, or Western Europe, where it seems to be entirely replaced by Savi's Warbler. It is said to have occurred in Italy; for Contarini includes it in his list of the birds found near Venice; and Althammer does the same in his list of the birds of the Tyrol, with a note of interrogation; but Salvadori doubts its ever having been really met with in that country. According to Mr. C. A. Wright (Ibis, 1864, p. 72), Schembri once noticed it at Malta;

but there may have been some mistake here also. Nor has it been recorded from Greece; but it is found in many parts of Southern Germany, and was first described from the Danube. Dr. A. Fritsch says (J. f. O. 1871, p. 195) that, according to Palliardi, it has been observed in Bohemia, but he himself never met with it or saw it in any collection. It appears, however, either to have been overlooked, or it is gradually extending its range further westward; for, according to Mr. Arlt (J. f. O. 1870, p. 225), in 1867 it was unknown near Breslau; but in 1868 two or three pairs were seen, and in 1869 there were about ten pairs. It is found in Hungary, and doubtless occurs on the Lower Danube; but I have never received specimens in any collection from Turkey. Von Nordmann speaks of it as being rare in Southern Russia, and says he heard it when travelling between Kherson and Aleschki; and Mr. Goebel thinks that it is found in the Uman district. Dr. Krüper writes that he has met with it in Asia Minor; and I possess a specimen collected by him near Smyrna in May 1871. Canon Tristram also (*l. c.*) writes that he several times met with a pair in Palestine evidently engaged in domestic duties, but he never found a nest. In North-east Africa it appears to be extremely rare, and neither Von Heuglin nor Captain Shelley ever met with it; and in North-western Africa it is equally scarce. Major Loche speaks of it as being very rare, and says that it does not, he believes, ever remain in Algeria to breed; and few other ornithologists who have collected in that country appear to have met with it.

How far eastward the range of the present species extends I cannot with certainty say; but I have not been able to trace it beyond any of the localities above mentioned.

In its habits the present species bears considerable affinity to both the Grasshopper-Warbler and Savi's Warbler; and like the former of these it does not always frequent marshy localities, but is more frequently met with in wooded districts, and not so often in large reed-covered marshes. Mr. E. Schauer has published (J. f. O. 1873, pp. 161–183) some excellent notes on the present species and its two allies, the Grasshopper and Savi's Warblers, from which I extract the following notes:—"The true home of the River-Warbler appears to be Galizia; and it is frequently met with in willow-growth and woodland meadows in the middle of the largest conifer-woods, or where on the meadows and pastures the bushes are small and scattered, rendering it too poor a cover for *Sylvia nisoria*. Especially uncultivated places are frequented by it; and hence its true home appears to be the beech thickets, where in some localities it is so numerous that several may be heard chirping at one time; and were not their voices deadened by the song of the Nightingales, more might be heard. In the beech-woods on the chalk formation in Eastern Galizia, where amongst fallen timber, old and mouldering branches, the vegetation is dense, consisting of high grass, weeds of various kinds, brambles, raspberry-bushes, and especially the magnificent *Epilobium angustifolium*, where the vegetation is most luxuriant, is the favourite home of the so-called River-Warbler; for a River-Warbler it certainly is not, in the true acceptance of the term. It arrives about the middle of May; but it is hard to define its time for departure, as it is silent during the latter part of its sojourn. Probably it leaves somewhat earlier than the Grasshopper-Warbler. When it arrives it does not at once proceed to its summer haunts, but rambles about in places where one would least expect to meet with it, and is seen in the gardens amongst the gooseberry-bushes, even in the woven fences, such as are made in Galizia and such places; and Mr. Schauer shot twenty in a few days in his garden. In

its general habits it is eminently secretive, creeping about amongst the bushes and grass; and it is scarcely possible for any one, except a person who is well acquainted with its habits, to catch a glimpse of it; and the females, especially as they do not sing, are but seldom obtained. It flies short distances with even flight and quick short flaps of the wings, always straight in one direction, like a large sphinx moth, and never in a bow-shaped flight; nor does it ever pick up an insect when on the wing. When disturbed it never seeks safety in flight, but when approached drops like a stone as if shot dead, often never moving its wings, down to the ground, and creeps away in the grass: nor is it then possible to flush it again; for it seeks the densest growth, and even with the help of a first-rate dog one can but ascertain which direction it has taken. When commencing its song, it begins not like most other songsters, who fly to some elevated perch and pour forth their melody at once, but commences practising its song in a low tone whilst hopping about on the ground, and then by degrees working its way up to some elevated perch, utters its full cricket-like song from there. Its call-note is a low, harsh sound, not unlike the prelude of its song. When singing, it erects the head until the upper mandible is almost perpendicular, puffs out the feathers on the throat, and, opening its bill wide, vibrates with the tongue metrically to the tune of its cicada-like song. There are two differently pitched tones in the song—the one being probably uttered as the bird draws in its breath, and the other as it expels it. Whilst uttering its song it moves the head from side to side, thus causing its notes to be now stronger, now weaker; and it never sings whilst moving from one place to another, but only when sitting quiet; and when it moves or hops it leaves off singing.”

The eggs of this Warbler resemble those of Savi's Warbler very closely; but the nest appears to be somewhat different. Count Casimir Wodzicki, who has taken several nests, gives (J. f. O. 1853, Extrah. p. 47) some excellent notes on its habits and nidification, from which I extract the following details respecting the nest:—"Three nests I have examined all differ. The first was found near a small alder-fringed brook, and of all three most nearly resembles the nest of Savi's Warbler, being built of flags very carelessly put together and not at all interwoven, and carefully lined with moss and fine rootlets; round the nest there was a lot of dry stuff, which though, properly speaking, it formed a portion of the structure, still the inner nest could be taken away without disturbing it. The second nest, sent to me by Dr. Heckel, of Vienna, is carelessly constructed of flags, grass, and willow leaves, carefully lined with grass-roots; and though the inner cup is small, the entire structure is so large that one would think it belonged to a bird at least as big a Thrush. The third nest is small, built of fine grasses and moss, and is likewise surrounded with a lot of leaves, &c.; and the habit of thus surrounding the nest as the Dipper does, appears to be peculiar to this Warbler. This nest was found in a dense swampy wood, between the roots of a pine tree. The nest of this species differs more from that of Savi's Warbler than its song does." The eggs, he says, differ considerably in form, but less in coloration, and are sometimes rounded, sometimes elongated, but never pointed; and usually four or five is the number deposited.

I am indebted to Mr. Taczanowski, of Warsaw, a most excellent field-naturalist, for some good field-notes on this Warbler, which I translate as follows:—"Though tolerably common in Poland, this Warbler is most difficult to observe, owing to its peculiarly secretive habits and its habitat being in localities so difficult to penetrate. Marshy willow-beds, where the soil

is covered with dense vegetation and bushes, are its favourite localities; but it appears equally fond of thickets on the dry ground and the edges of large forests, is found in willow-thickets in the pastures; and water is not an essential element in its habitat. It arrives here (in Poland) early in May, and leaves in August. Its presence is made known by its monotonous song, which may be imitated by the syllable *zi, zi, zi*, repeated for some time, which somewhat resembles that of the Grasshopper-Warbler, but may be easily distinguished by a practised ear. When commencing its song the male climbs obliquely along a branch until it reaches a certain height above the ground, where it remains for hours at a time, seated with drooping tail; or sometimes it makes its perch on an elevated branch. At midday it sings at intervals of a few minutes; but in the early morning it sings for hours, with only a slight intermission of a few moments. In places where these birds are numerous their combined song resembles more the call of the cicada than the note of a bird. So soon as any one invades its home, it drops down from its perch like a stone, and creeps away amongst the grass; but if one remains quiet it appears after a short time again, either on its old perch or some other bush near, and recommences its song. When pursued it takes wing only when hard pressed, and tries to escape by creeping amongst the tangled herbage. Its nest is extremely difficult to find, being in almost impenetrable places. The male sings near the nest, but directly any one approaches, the female slips off and creeps away along the ground, never taking wing and betraying her nest. The nest is placed on the ground amongst the grass, always in places bare of bushes, and is in a hollow in the ground, so that the walls of the nest itself are but little elevated above the level of the soil; the outside of the nest is a mass of dry willow-leaves, something like the outside of a Nightingale's nest; and inside this the nest is constructed of grass bents, with finer bents and rootlets in the interior lining. The total diameter is 10 centimetres, and the depth 4 centims. In general character the nest resembles that of the Nightingale, but is less carefully built, the outer bed of leaves is smaller, the bents in the interior of the nest are coarser and fewer in number, the general structure is more carelessly put together, and it is not so deep. The eggs, five in number, somewhat resemble those of the Grasshopper-Warbler; they are white, very transparent, and covered with pale ashy and chestnut or reddish spots and dots, which are less numerous and smaller than those on the eggs of Savi's Warbler: often these spots are collected round the larger end, but never so closely as to hide the white ground-colour of the egg. In one nest I found two eggs, which I removed, and put in two Garden-Warbler's eggs. On revisiting the nest a few days later I found two more River-Warbler's eggs, but the Garden-Warbler's eggs had gone. I repeated my former experiment, and two days afterwards I found the eggs of the Garden-Warbler again removed and one egg of the River-Warbler in the nest. I believe the bird would act in a similar manner if a Cuckoo deposited her egg in its nest."

I possess the eggs of this Warbler, collected in Silesia. In general character they resemble those of Savi's Warbler, but have a rather whiter ground, and somewhat more clearly defined spots. The ground-colour is white; and they are minutely spotted with greyish lilac underlying shell-markings and dark reddish brown overlying surface-spots, or dots; for the spots are very small, and, though generally scattered over the surface of the shell, are thicker at the larger end. In size six eggs in my collection average $\frac{6.3}{8.0}$ by $\frac{4.6}{8.0}$ inch.

The specimen figured, on the same Plate with *Locustella lanceolata*, is an adult male sent to me from Silesia by Dr. Kutter, and is in my collection.

In the preparation of the above article I have examined the following specimens:—

E. Mus. H. E. Dresser.

a, b, ♂. Silesia, 1866 (*Dr. Kutter*). *c.* Danube (*Möschler*). *d, ♂*. Smyrna, May 11th, 1871 (*Dr. Krüper*).

E. Mus. Howard Saunders.

a. Danube (*Möschler*).



SAVIS WARBLER.
LOCUSTELLA LUSCINIODES

LOCUSTELLA LUSCINIODES.

(SAVI'S WARBLER.)

- Sylvia luscinioides*, Savi, Nuovo Giornale de' Letterati, vii. p. 341 (1824).
Pseudo-luscinia savii, Bp. Comp. List, p. 12 (1838).
Salicaria luscinioides (Savi), Keys. & Blas. Wirbelth. Eur. p. liii (1840).
Lusciniopsis savii, Bp. Ucc. Eur. p. 36. no. 153 (1842).
Calamodyta luscinioides (Savi), G. R. Gray, Gen. of B. i. p. 172 (1844-49).
Cettia luscinioides (Savi), Z. Gerbe, Dict. Univ. d'Hist. Nat. xi. p. 240 (1848).
Locustella luscinioides (Savi), C. L. Brehm, Vogelfang, p. 234 (1855).
Lusciniola savii, Bp. Cat. Parzud. p. 6 (1856).
Locustella savii (Bp.), Salvin, Ibis, 1859, p. 356.
Lusciniopsis luscinioides rufescens, A. E. Brehm, Verz. Samml. C. L. Brehm, p. 6 (1866).
Lusciniopsis luscinioides macrorhynchos, A. E. Brehm, ut suprâ (1866).
Lusciniopsis luscinioides brachyrhynchos, A. E. Brehm, ut suprâ (1866).
Calamodyta (Lusciniopsis) luscinioides (Savi), Fritsch, Vög. Eur. p. 160, pl. 18. fig. 3 (1870).
Fauvette des Saules, French; *Salciajola*, Italian; *Pagliarol*, Modenese; *Nachtigall-Rohrsänger*, *Weidenrohrsänger*, German; *Nachtegal-Rietzanger*, Dutch.

Figuræ notabiles.

Gould, B. of Eur. pl. 104; id. B. of G. B. ii. pl. 77; Roux, Orn. Prov. pl. 211 bis; Fritsch, *l. c.*; Schlegel, Vog. Nederl. pl. 81; Naumann, Vög. Deutschl. taf. 370. figs. 4, 5.

Ad. capite et corpore suprâ cum alis et caudâ rufescenti-brunneis vix olivaceo tinctis, pileo saturatiore, et uropygio vix pallidiore: caudâ indistinctè transfasciatâ: gulâ et abdomine centrali albidis: corpore reliquo subtùs pallidè rufescenti-cervino, hypochondriis et subcaudalibus elongatis pallidè rufescenti-brunneis: rostro brunneo, mandibulâ pallidiore: pedibus pallidè brunneis: iride fuscâ.

Juv. adulto similis, sed corpore suprâ grisescentiore et minus rufescente, corpore subtùs albidiore.

Adult (Whittlesea Mere). Entire upper surface of the body, wings, and tail reddish brown, with a faint olive tinge; the head being rather darker, and the rump rather lighter than the rest of the upper parts; tail marked with obsolete bars so faintly that they can only be discerned by holding it in certain lights; throat and centre of the abdomen white, rest of the underparts pale rufescent-buff; the flanks and under tail-coverts (which latter are very long) darker, being pale reddish brown; bill brown, lower mandible lighter; iris dark brown; legs pale brown. Total length about 5.5 inches, culmen 0.6, gape 0.62, wing 2.7, tail 2.5, tarsus 0.9; first primary very short, fully 0.15 less the primary coverts, and 1.65 less than the second, which is the longest; second and third quills much curved.

Nestling (Andalucia, Spain). Resembles the adult bird; but the upper surface of the body is greyer and not so rufous, and the underparts are much whiter.

Obs. With regard to the barring on the tail I find that it is by no means always present, and the older birds seem to have it least defined, whereas young freshly moulted examples have the bars quite clearly defined.

THIS comparatively little-known Warbler has a tolerably restricted range, being found in North-western, East-Central, and Southern Europe during the summer season, and it both breeds and winters in North Africa.

In Great Britain it appears only to have occurred in the fen countries of Eastern England, and is ere this doubtless quite extinct; for most of the large fens have been drained off and brought under cultivation. Long ago, when the fens extended over a vast tract of country, it may probably have been tolerably numerous; but ever since it was known as a distinct species it has been rare. The first specimen ever brought to the notice of naturalists was undoubtedly, however, a British-killed bird, obtained, Mr. Stevenson says, by the late Rev. James Brown at Limpenhoe, Norfolk, in the early part of the present century, during the month of May. This specimen was submitted to the inspection of Temminck when he was in London in 1819; and he took it with him to the Continent to compare it with specimens in his collection, but, on returning it, pronounced it to be a variety of the Reed-Wren; and as such it was noticed by Messrs. Sheppard and Whitear in their 'Catalogue of Norfolk and Suffolk Birds,' and is now in the Norwich Museum. Professor Newton further points out (Yarrell's Brit. Birds, i. p. 390) that there is little doubt that Temminck mistook the specimen in question for *Sylvia cettii*, La Marm., which, in the second edition of his 'Manuel d'Ornithologie,' he stated had been killed in England, whereas Cetti's Warbler has never occurred in this country. Besides this specimen, one was procured at Strumpshaw by a man of the name of Waters (who collected for the Rev. J. Brown), and was given to the late Mr. Lombe; a pair were shot at South Walsham in 1843, and are now, Mr. Stevenson states, in the Norwich Museum; and one, he says, was obtained by the Rev. H. T. Frere, of Burston, from the same locality. Mr. Stevenson himself possesses an example shot at Surlingham on the 7th June, 1856; in Mr. Newcome's collection is a nest from near Yarmouth; and Professor Newton says that Mr. John Brown has heard it in the Feltwell fen. It has also occurred in Cambridgeshire, where several nests have also been taken. According to Professor Newton a pair were obtained in the Cambridgeshire fens by the late Mr. J. Baker in the spring of 1840, and soon after that a pair were obtained from the same locality by Mr. Joseph Clarke, of Saffron-Walden. The first nests were taken in May 1845, in a sedge-fen in the parish of Milton, and were purchased by Mr. Bond; and since that time nests and eggs have been obtained from the same locality, from Burwell fen, Wicken fen, and Wood-Walton fen, in Huntingdonshire, now under cultivation, but whence Mr. Hudleston obtained a nest and eggs in 1849. Professor Newton states that it may be confidently asserted that the bird has not been noticed anywhere in England besides the localities named; and certainly it is unknown in Wales, Scotland, or Ireland. It does not occur in Scandinavia, Northern Russia, or in Germany, but is, or was, tolerably common in some parts of Holland; and I well recollect, when in Rotterdam some years ago, on my way to join my tutor, after having left school, seeing about a dozen nests with eggs, in the possession of a well-known game-dealer in that town, who offered me the lot at about a shilling an egg all round, the nests to be thrown in; but as he would not divide the lot, and my finances were then at a rather low ebb, I did not purchase them. Mr. Labouchere

informs me that at the present time it is only known to inhabit the marshes adjoining the river Maas ; and Professor Schlegel told me, when I last visited him in Holland, that it is found only in a very limited district. It is not mentioned as occurring in Belgium ; and as regards France, it is stated by Degland and Gerbe to be found in Roussillon, Languedoc, and Provence. It has been observed in winter in the Camargue ; and MM. Jaubert and Barthélemy-Lapommeraye state that it is there resident, but migratory on the Durance. It is also said to have been seen near Bordeaux. In Portugal it would appear to be wanting ; but it has lately been found breeding, and not uncommon, in Southern Spain, not very far from Gibraltar, by Colonel Irby and Mr. Stark, to whom I am indebted for specimens of the bird as well as its nest and eggs ; and some excellent notes on its nidification by the former gentleman are given below. I have also examined a specimen in the collection of Mr. Howard Saunders, a bird of the year, which was obtained near Malaga in August 1872.

Passing eastward, again, we find it recorded as occurring in Tuscany, and especially near Pisa, whence it was obtained, and first described (*l. c.*) by Savi ; but according to Count Salvadori it is not found in Piedmont or Lombardy, is occasionally met with near Venice, is not rare in Modena and Liguria, whereas in Sicily and Sardinia it is extremely rare. It has, however, occurred at Malta ; but I find no record of it from Greece.

It appears, according to Count Casimir Wodzicki, to be on the whole not uncommon in Galizia, being numerous in some seasons, whereas in others it is comparatively rare ; and a specimen was obtained by Mr. Zelebor at Bellye, in the Hungarian Banat. In Southern Russia it is said by Professor von Nordmann to be in all probability not rare in New Russia, as in the latter half of April in two successive years he obtained several live specimens which had entered through the open windows of the orangeries of the Botanic Garden of Odessa. He describes their agility in climbing amongst the plants and their skulking habits. Those captured uttered no note, and only lived three or four days. I do not find any record of its occurrence in Asia Minor ; and a specimen sent to me by Dr. Krüper labelled *S. luscinioides* proved on examination to be *Locustella fluviatilis* ; but Canon Tristram obtained a specimen in Palestine. It occurs in North-east Africa, where, Captain Shelley writes (*B. of Egypt*, p. 89), "it is resident in Egypt, tolerably abundant, and generally distributed. It usually frequents the corn-fields, selecting the spots where the crop grows most luxuriantly ; and it may also be found in the reedy marshes of the Delta and Fayoom, where I have frequently seen it, and occasionally procured specimens. When disturbed it leaves its shelter very reluctantly, and flits away hurriedly, flying close to the top of the herbage for a short distance, and then it suddenly dips down and is immediately hidden. Nor will it allow itself to be driven far from the place whence it originally started, but, if pursued, prefers to seek shelter by creeping among the stalks of the plants rather than expose itself again by taking wing. On this account the bird is difficult to procure, and is consequently rare in collections." Mr. E. Cavendish Taylor also met with it in Egypt in winter. It also occurs in North-western Africa ; and Loche states that it occurs in some parts of Algeria, such as Harrach and Lake Halloula, from March to September, but it is local and not found throughout the year. Canon Tristram, however, met with it during winter in the sedges round the Sebka, Waregla, N'goussa, and Tuggurt ; and Mr. Salvin writes (*Ibis*, 1859, p. 304) as follows :—"I found this bird abundant in the marsh of Zana. On approaching the margin of

the reeds its peculiar rattling note might be heard in every direction. The bird, when uttering this cry, climbs to the very top of a reed, often choosing the tallest, where it sits, if not disturbed, for several minutes without changing its position. When singing, the head is moved slowly from side to side, by which means it may be that the ventriloquism ascribed to the Grasshopper Warbler is produced, the apparent change of position of the bird being, in fact, a change in the direction in which the sound of its voice is thrown. On taking alarm, the songster drops instantly into the thickest sedge, when pursuit is hopeless, as it carefully eludes observation, never showing itself in open light; sometimes, however, its course may be traced by the shaking of the reeds as it springs from one to another. The peculiar nest of this species—a beautifully compact structure, composed entirely of dead flags—is artfully concealed in the thickest parts; and at Zana it can only be found by wading in mud and water up to the middle; and even then it is quite a chance to find one. The eggs from this locality are decidedly smaller than English and Dutch specimens.” It does not appear to occur on the Canaries; and as regards the eastern limit of its range, I find no record of its having been met with further east than Southern Russia.

This Warbler is a true marsh-bird, and is never found except in low marshy localities covered with a dense growth of reeds, sedges, and low bushes; for, unlike the Grasshopper Warbler, which it otherwise resembles in its habits, it never quits these localities, or is found in dry ground. It is a shy bird, and may easily be overlooked, as it keeps itself well concealed amongst the dense herbage, and is usually very reluctant to take wing. As a rule it is a summer visitant to all parts of Europe where it occurs, arriving in April and leaving again early in September.

Some excellent notes on its habits and nidification, unfortunately too long to translate *in extenso*, have been published by Count Casimir Wodzicki (J. f. O. 1853, Extrah. pp. 48–50). Comparing the present species with its ally (*L. fluviatilis*), he says that it is much tamer and more curious, always in motion, now on the ground, now climbing about amongst the reeds. If it hears a noise it comes to ascertain the cause, and will perch on a reed to ascertain who the intruder is. In some seasons it is numerous, and in others rare. Unlike the River-Warbler it is very excitable and quarrelsome, and will follow a rival into the immediate vicinity of an intruder, even when shots have been fired. Both sexes incubate in turn, and sit so close that they may be watched when on the nest, and when frightened off soon return, flying from branch to branch, coming almost always on the wing, and not skulking along the ground. The nest he describes as resembling that of the Little Crake, but less in size, and adds that he has frequently watched them building. At first both sexes assist; but later on all the labour devolves on the female. The call-note of both sexes is a short *krr*. During the breeding-season the male sings incessantly, and when uttering his song sits high or low, but always still, the neck being stretched, the head slightly thrown back, and the throat puffed out. He heard the song all day to sunset, but not in the night.

After the young are fledged, the whole family leave the reeds and spread over damp places covered with grass and water-plants, where they remain till late in September and then migrate. Contrary to what Count C. Wodzicki states, Professor Newton says that its song is heard chiefly early in the morning or at nightfall, and consists of a long smooth trill, pitched higher, but possessing more tone than that of the Grasshopper Warbler.

One of the first nests ever taken, placed in the British Museum by Mr. Bond, has been figured by Professor Newton, who adds that it has been examined by Mr. Carruthers, who states that, except a single leaf of *Cladium*, the whole fabric consists of *Glyceria aquatica*; and two nests obtained by Mr. Baker in Holland, and submitted to Professor C. C. Babington, were pronounced by him to be built of the blades of *Glyceria fluitans* or *G. plicata*.

The eggs of this Warbler, usually from four to five or even six in number, are french white closely dotted with minute underlying bluish grey shell-markings and fine brownish surface-dots, which in most of the specimens in my collection are generally distributed over the surface of the shell; but in two specimens collected by Colonel Irby in Spain there is, besides the usual markings, a wreath of dark reddish brown dots, almost confluent, round the larger end. They bear some resemblance to the eggs of the Grasshopper Warbler, but are, as a rule, larger and more distinctly spotted with darker dots. In size eggs in my collection from Holland and Spain vary from $\frac{6.1}{8.0}$ by $\frac{4.5}{8.0}$ inch to $\frac{6.5}{8.0}$ by $\frac{5.0}{8.0}$ inch. Colonel Irby has lent me several nests for examination, all of which, like those above described, are constructed entirely of the blades of water-plants. This gentleman, in a most useful work on the ornithology of Spain, which will ere long be published, gives some notes on its nidification, which I transcribe as follows:—"I only found it in one locality in Andalucia, where once (in winter), when Snipe-shooting, I noticed some old nests in the sedges, which apparently belonged to this species, and made up my mind to try the next spring for them. However, for two years I was unable to do so; but in 1874 I went to this place in May with two friends, Mr. Stark being one, and we succeeded in finding thirteen nests, nine of which fell to my share. The first nest was found by Mr. Denison, on the 4th May, and contained four fresh eggs; the others as follows:—on the 6th, one nest with four fresh eggs; on the 7th, three nests—one empty (deserted), two with four eggs each, one lot fresh, the other hard sat-on; on the 8th, one nest procured with three eggs slightly sat-on, and one nest with five fresh eggs; on the 9th, two nests with four eggs each, all hard sat-on, and one nest with three young fully fledged; on the 11th, one nest with five fresh eggs; and on the 13th, one nest with two fresh eggs. By this it will be seen that the time of their breeding is rather variable.

"The precise time of their arrival I could not ascertain; but it is after the 6th of March; and they are all gone by September. The nests, sometimes very near to one another, are very difficult to find, and were, without exception, built in places where the mud and water varied in depth from two or three inches to perhaps two feet. All but one were in sedges, so well concealed as only to be found by accident. I spent sometimes the whole day in these marshes, looking in vain, with my gun in one hand and a sickle in the other, which I used to open the sedges with, as it cut one's fingers severely to try and move them with the hand. What with the hot sun and the stink of the mud, I used to despair utterly, after hours of fruitless search, but generally found a nest in the evening. The whole marsh was trodden down by us as if a herd of cattle had been in it; but perhaps the next day, going over the same ground, one would find a nest in a bunch of sedges which had been passed by within a yard. The nests were all alike, loosely and clumsily built, solely constructed of dead sedge, often placed so close to the water that the base was wet; they were always in the open marsh, none, that I saw, under bushes or in tall rushes or reeds.

"The single nest that was not in sedges was in a tuft of the spiky rush so common in wet ground. In this case (the first one, found by Mr. Denison) the bird flew off—the only instance in which it did so, as they creep off generally like a mouse. On one occasion I cut away all the sedge round the nest, except just the patch in which it was built, as I wanted to shoot the bird from the nest, to make certain of the identity of the eggs; but even then, after watching the old bird go into the nest, she would not fly off, but ran across the open space which I had cut away till she gained the shelter of the uncut sedges. Much more frequently seen than Cetti's Warbler, the greatest difficulty is in finding them when shot. If killed on the wing it is almost hopeless to look for them; and those that I did obtain I have to thank my dog for finding, though he did spoil one or two. They are most easy to be got in the morning and evening, when the male perches on a willow bush or tall reed, and sings his grasshopper-like song or rather whirr. I only found them in one particular locality: in other marshes, very similar in appearance, I failed to hear or see them; and they probably require a very large extent of sedge.

"The eggs are of a whitish ground-colour, marked all over with minute spots of brown, thicker at the larger end, often forming a well-marked zone. Sometimes the ground-colour is buff; but I only saw two or three of this hue."

Having deemed it best to figure a British-killed specimen, as the bird was first discovered here, I have figured an adult bird in the collection of Messrs. Salvin and Godman from Whittlesea mere, and a nestling from Andalucia, obtained by Colonel Irby, these being also the specimens described.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a, ♀. Ouderkerk, Holland, May 28th, 1857 (*J. Baker*). *b*. Holland, 1862 (*J. Baker*), *c*, ♂. Near Gibraltar, Spain, May 6th, 1874 (*H. L. Irby*). *d*, ♀. Near Gibraltar, May 2nd, 1874 (*H. L. Irby*). *e*, pull. Near Gibraltar, May 13th, 1874 (*H. L. Irby*).

E Mus. A. C. Stark.

a ♀, *b*, ♂. Near Gibraltar, Spain, May 1874 (*A. C. S.*).

E Mus. Salvin and Godman.

a. Whittlesea mere, near Cambridge. *b*. Wicken, Cambridgeshire, June 15th, 1847. *c*, *d*, ♂, *e*, ♀. Holland (*J. Baker*). *f*. Zana, Algeria 1857 (*O. Salvin*).

E Mus. Howard Saunders.

a. Troughton's sale. *b*. Holland, 1865 (*J. Baker*). *c*, juv. Holland (*Baker*). *d*. Near Malaga, August 8th, 1872 (bird of the year).



PALLAS' WARBLER.
LOCUSTELLA CERTHIOLA

LOCUSTELLA CERTHIOLA.

(PALLAS'S WARBLER.)

- Motacilla certhiola*, Pall. Zoogr. Rosso-As. i. p. 509 (1811).
Turdus certhiola, Pallas in Fauna Rossica, fide Temm. Man. d'Orn. . p. 187 (1820).
Sylvia certhiola (Pall.), Temm. Man. d'Orn. i. p. 186 (1820).
Locustella rubescens, Blyth, Journ. As. Soc. Beng. xiv. p. 582 (1845).
Locustella certhiola (Pall.), Bp. Consp. Gen. Av. i. p. 280 (1850).
Salicaria (Locustella) certhiola (Pall.), Schr. Reis. & Forsch. im Amurl. i. p. 372 (1860).
Sylvia (Calamoherpe) certhiola (Pall.), Blas. in Naum. Naturg. Vög. Deutschl. xiii. Nachtr. p. 91 (1860).
Locustella temporalis, Jerdon, B. of India, ii. p. 160 (1863).
Calamodyta doriæ, Salvadori, Att. R. Accad. Sc. Tor. iii. p. 531 (1868).
Salicaria certhiola (Pall.), Rey, Synonymik eur. Vög. p. 60. no. 239 (1872).
Calamodyta rubescens (Bl.), Gieb. Thes. Orn. i. p. 529 (1872).
Calamodyta certhiola (Pall.), Tacz. J. f. Orn. 1872, p. 356.
Locustella minor, Oustalet, Ois. de la Chine, p. 250 (1877).
Camishevka-priatlivaya, Russian.

Figuræ notabiles.

Gould, B. of Eur. pl. 105 ; Werner, Atlas, *Insectivores*, pl. 25 ; Sharpe, Ibis, 1876, pl. ii. fig. 2.

Ad. pileo et nuchâ nigro-fuscis cinereo-cervino striatis, dorso et tectricibus alarum minoribus cervino-fulvidis nigro-fusco notatis : uropygio cervino, fulvo-fusco indistinctè notato : remigibus fuscis, primariis extùs fulvo-cervino marginatis, secundariis et tectricibus alarum majoribus cervino-albido marginatis : caudâ fuscâ, versus apicem saturatiore et cinereo-albo apicatâ : capitis et colli lateribus pallidè cinereo-fuscis, striâ superciliari distinctâ grisea : mento, gulâ et abdomine centraliter albis : pectore pallidè cervino : hypochondriis et subcaudalibus pallidè cervino-fuscis, his albo apicatis : rostro fusco, mandibulâ pallidiore : iride fuscâ : pedibus pallidè fusco-incarnatis.

Juv. pileo et corpore suprâ cum tectricibus alarum saturatè nigro-fuscis, plumis olivaceo-fulvido marginatis : uropygio magis fulvido : alis et caudâ nigro-fuscis, fere nigris, remigibus extùs olivaceo-fulvo marginatis : caudâ cinereo apicatâ : corpore subtùs flavido-cervino, gulâ fere sulfureâ, striâ superciliari flavo-cervinâ, gulâ imâ et gutture fusco guttatis : hypochondriis et subcaudalibus fusco-cervinis.

Adult Male (Lake Baikal, 16th June, 1870). Crown and nape blackish brown, striped with buffy grey ; back and wing-coverts warm ochreous brown, broadly blotched with blackish brown, most of the feathers being blackish brown, edged with ochreous brown ; rump dull reddish ochrescent brown, with a few obsolete markings, darkening on the upper tail-coverts ; wings and tail brown, with lighter margins, the latter much rounded, darkening towards the tip, and tipped with dull greyish white ; margins to the primaries reddish buff, the secondaries and larger wing-coverts being broadly margined with buffy white ; sides of the head and neck pale greyish brown ; a distinct greyish white stripe passes

from the base of the bill over the eye; chin and throat pure white; breast pale buffy; flanks and under tail-coverts warm buff, the latter tipped with white; centre of the abdomen pure white; bill brown, the under mandible paler; legs fleshy brown; iris dark brown. Total length about 5.25 inches, culmen 0.55, wing 2.8, tail 2.33, tarsus 0.9.

Young just fledged (Yennesaïsk, 18th August). Upper parts blackish brown, almost black, the feathers margined with warm reddish brown, with an olivaceous tinge; rump more of a reddish brown colour; underparts yellowish buff; the throat nearly sulphur-yellow; the streak over the eye yellowish buff; lower throat spotted with dark brown; flanks and under tail-coverts warm brownish buff.

Obs. From the young plumage above described the bird gradually assumes the adult dress; and several that I have examined shot in the early summer are in an intermediate stage between the young and old plumage. Judging from examples I have seen, there is no appreciable difference between the summer and winter dress, and the sexes are alike as regards plumage.

THE present species inhabits Eastern Asia, and is only a very rare straggler to the Western Palæarctic Region. Temminck first included it (*l. c.*) as a European species, stating that it inhabited Southern Russia; but he appears to be in error as regards its having ever been killed in European Russia; and although it has been very generally retained in the European list, there seems to have been no authentic instance of one having been obtained in Europe until Mr. Gätke procured a very fine example in Heligoland.

In Asia it is found from Western Siberia eastward to China. Mr. Seebohm informs me that he found it breeding at Yennesaïsk; Von Middendorff does not appear to have met with it, as the bird referred to by him under the name of the present species really proved to be *Locustella ochotensis*; and Mr. Seebohm says that all the specimens in the St.-Petersburg Museum labelled *Locustella certhiola* belong also to that species; but, judging from the descriptions given, both Von Schrenck and Dr. Radde obtained the true *Locustella certhiola*. The former says that Mr. Maack met with it on the shores of the Schilka, close to its confluence with the Argunj, on the 3rd June; and Dr. Radde shot one on the Tarei-nor. Dr. Dybowski has sent many skins from Dauria; and Colonel Przevalsky writes, it "is tolerably abundant in the Hoang-ho valley, but is very rare at Ala-shan and Halka, inhabiting only small, clear marshes. We did not obtain it more than once in Kan-su. It is extremely common in the Ussuri country; and on the coasts of the Japanese Sea I observed it migrating in the early part of October." Père David met with it in Central China, though not near Pekin; and Mr. Swinhoe obtained it on passage at Chefoo. In India, according to Dr. Jerdon (*B. of India*, ii. p. 159), it was first observed by him near Mhow, in Central India during the rains. Blyth procured it from Lower Bengal, not far from Calcutta; and Jerdon subsequently obtained it near Monghyr, and also observed it in other places along the Ganges, and surmises that it will probably be found in suitable localities throughout India. Under the name of *Locustella rubescens*, he adds that he obtained one near Jounpore in March 1848. It ranges tolerably far south; for Captain Legge obtained it in February in Ceylon; there are specimens in Lord Tweeddale's collection procured in December and January in South Andaman. Salvadori describes it from Borneo; and there are examples in the British Museum from the same locality. It does not appear to occur in Japan; for according to Mr. Swinhoe the Japanese bird is *Locustella ochotensis*.

Comparatively speaking, but little is known about the habits of this bird. Dr. Jerdon says (*l. c.*) that it “frequents long grass and grain, and is with some difficulty procured, as it always tries to conceal itself among the long grass, and, when flushed, takes a very short flight, again hides itself, and is with difficulty dislodged.” Mr. Seebohm writes respecting its habits as observed by him at Yennesaïsk as follows:—“I found it a very shy, skulking bird, frequenting the marshes and swampy copses on the great meadows by the river-side. The young birds, some only half-fledged, were still in broods; and occasionally I got a shot at one which ventured into the willows. They were calling anxiously to each other, the note being a harsh *tic, tic, tic*.” I translate the following notes communicated by Dr. Dybowski to Mr. Taczanowski (*J. f. Orn.* 1872, p. 356):—“This is a somewhat rare bird (in Kultuk), and passes about the middle of June. It frequents wet grass-covered meadows, and thickets on the edges of streams. It builds in a tuft of grass close to the ground; and the number of eggs deposited is five or six. They are rosy-white in colour, closely marked with reddish-brown dots, which, though indistinct, cloud the ground-colour. These dots are more numerous on one end, and form a more or less distinct ring, which is sometimes 3 millims. broad, and is on some clearly distinct from the ground-colour, and on others scarcely visible. Occasionally there are a few pure brown scratches as on the eggs of *Calamodyta phragmitis*. They measure 19 by 14½, and 19½ by 14 millimetres. The female sits very close, and only flies off when nearly trodden on; and this often leads to the discovery of the nest. In the autumn it remains until the second half of September.”

There is in Eastern Asia another tolerably closely allied species which has been very generally confused with *Locustella certhiola*, but which is easily recognizable by having the upper parts uniform in colour and not variegated. This species, *Locustella ochotensis* (Midd.), is found also in Kamtchatka, and replaces *Locustella certhiola* in Japan and the Kurile Islands.

The specimens figured are a very old bird from Lake Baikal, in my own collection, and a quite young example obtained by Mr. Seebohm at Yennesaïsk, both being those above described. A very good figure of the second stage of plumage, when the upper parts are richly marked as in the very young bird, but the underparts are nearly as in the old bird, is given in ‘The Ibis’ for 1876 (pl. ii. fig. 2).

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a, ♂ *ad.* Lake Baikal, southern side, June 16th, 1870 (*Dr. Dybowski*).

E Mus. Lord Tweeddale.

a, ♀. Chefoo, May 30th, 1873 (*Swinhoe*). *b*, ♂. South Andaman, December 29th, 1873. *c*, ♂. S. Andaman, January 6th, 1874 (*R. G. Wardlaw Ramsay*).

E Mus. H. Seebohm.

a, *juv.* Yennesaïsk, August 18th, 1877 (*H. S.*). *b*, *juv.* Lake Baikal, August 29th, 1870. *c*. Lake Baikal,

1876. *d*, *juv.* Lake Baikal, May 30th, 1877. *e*. Lake Baikal, June 19th, 1877 (*Dr. Dybowski*). *f*, ♂. Chefoo, China, May 1873 (*Swinhoe*).

E Mus. Brit. Reg.

a, *b*, ♂. Dauria, June 1873 (*Dr. Dybowski*). *c*. Lake Baikal (*Dybowski*). *d*, ♀. Ceylon, February 9th, 1877. *e*, ♂. Ceylon, February 15th, 1877 (*Legge*). *f*, *juv.* Sibu, Borneo, November 21st, 1874 (*Everett*).

Genus CETTIA.

- Sylvia* apud La Marmora, Accad. Tor. xxv. p. 254 (1820).
Calamoherpe apud Boie, Isis, 1822, p. 552.
Curruca apud Boie, tom. cit. p. 553.
Potamodus apud Kaup, Natürl. Syst. p. 123 (1829).
Phragmites apud Blyth in Rennie's Field Nat. i. p. 439 (1833).
Salicaria apud Gould, B. of Eur. pl. 114 (1837).
Philomela apud Swainson, Classif. of B. ii. p. 240 (1837).
Cettia, Bonaparte, Comp. List, p. 11 (1838).
Calamodyta apud G. R. Gray, Gen. of B. i. p. 172 (1849).
Bradypterus apud Cabanis, Mus. Hein. i. p. 43 (1850).

ALTHOUGH in some respects the single species which forms the present genus is by no means far from the true Aquatic Warblers, yet its peculiar eggs and the fact that it has only ten rectrices warrant its being placed in a separate genus. It appears to me to follow on between *Luscinola* and *Cisticola*; but the various authorities differ in the position they assign to it, and Sundevall places the present genus and *Melizophilus* in a separate subfamily, which he terms *Bradypterinae*.

Cetti's Warbler inhabits damp bush-covered localities, usually the margins of streams and ditches, and it is habitually very shy and unobtrusive. Like its allies it feeds on insects of various kinds, which it obtains in the thickets, amongst which it has its home. Its song is clear, loud, and pleasant, but not varied; and, like the Nightingale, it sings at night as well as in the daytime. Its nest is deep cup-shaped, and is placed on a bush some distance above the ground; and the eggs are peculiar in being uniform brick-red or dull pinkish-red in colour.

The range of the present genus is given in the following article on Cetti's Warbler, this species being the sole representative of the genus as well as the type.

Mr. Seebohm has ascertained that I was wrong in assigning Cetti's Warbler to the genus *Bradypterus*, and this being the case, the next available generic name is *Cettia* of Bonaparte; therefore Cetti's Warbler will stand as *Cettia cettii* instead of *Bradypterus cettii*.

Cetti's Warbler has the bill moderate in size, straight, compressed towards the base, higher than it is broad in the anterior portion; nostrils basal, oblong; wings rather short, graduated, first quill 0.63 inch shorter than the second, fourth and fifth the longest; tail much graduated, consisting of ten rectrices only; tarsi moderately long, covered anteriorly with four plates and three inferior scutellæ; feet rather strong, claws strong and curved.



M & N Hanhart imp

CETTIS WARBLER.
BRADYPTERUS CETTII.

BRADYPTERUS CETTIL.

(CETTI'S WARBLER.)

- Bouscarle, variété de la Grisette*, D'Aubenton, Pl. Enl. 655. fig. 2 (1770).
Sylvia cetti, Marm. Mem. Accad. Torino, xxv. p. 254 (1820).
Sylvia sericea, Natterer, in Temm. Man. d'Orn. i. p. 197 (1820).
Calamoherpe cetti (Marm.), Boie, Isis, 1822, p. 552.
Curruca sericea (Natt.), Boie, Isis, 1822, p. 553.
Curruca cetti (Marm.), Steph. in Shaw's Gen. Zool. xiii. ii. p. 209 (1826).
Potamodus, Kaup, Natürl. Syst. p. 123, partim (1829).
Phragmites cetti (Marm.), Blyth, in Rennie's Field Nat. i. p. 439 (1833).
Salicaria cetti (Marm.), Gould, B. of Eur. pl. 114 (1837).
Salicaria sericea (Natt.), Gould, op. cit. p. 115 (1837).
Philomela sericea (Natt.), Swains. Classif. of Birds, ii. p. 240 (1837).
Bradyptetus platyurus, Swains. tom. cit. p. 241 (1837).
Cettia altisonans, Bp. Comp. List, p. 11 (1838).
Cettia sericea (Natt.), Bp. op. cit. p. 12 (1838).
Cettia cetti (Marm.), Degl. Orn. Eur. i. 578 (1849).
Calamodyta cetti (Marm.), G. R. Gray, Gen. of B. i. p. 172 (1849).
Bradypterus cetti (Marm.), Cab. Mus. Hein. i. p. 43 (1850).
Calamoherpe sericea (Natt.), C. L. Brehm, Vogelfang, p. 236 (1855).
Calamoherpe cetti (Marm.), C. L. Brehm, op. cit. p. 236 (1855).
Potamodus cettii (Marm.), Lilford, Ibis, 1866, p. 178.
Cettia (Potamodus) orientalis, Tristr. Ibis, 1867, p. 79.
Cettia cettioides, Hume, Stray Feathers, i. p. 194 (1873).
Cettia albiventris, Severtzoff, Turk. Jevotnie, pp. 66 & 131 (1873).
Cettia scalenura, Severtzoff, op. cit. pp. 66 & 131 (1873).
Cettia stoliczkæ, Hume, Stray Feathers, ii. p. 520 (1874).

Bec-fin, *Bouscarle*, French; *Rusignuolo di fiumi*, Italian.

Figuræ notabiles.

D'Aubenton, Pl. Enl. 655. fig. 2; Werner, Atlas, *Insectivores*, pls. 30, 33; Gould, B. of Eur. pls. 114, 115.

Ad. suprà saturatè fuscescenti-castaneus, subtùs sordidè albus: alis et caudâ nigro-fuscis: colli lateribus grisescenti-brunneis: striâ superciliari albidâ: mento, gulâ centraliter et abdomine centrali purè albis: pectore vix cinereo lavato: hypochondriis, crisso et subcaudalibus fusco-cinereis.

Adult Male (Acarnania, 28th November). Entire upper parts deep rusty chestnut-brown, tail and wings

blackish brown; sides of the neck greyish brown; a whitish streak passes over the eye; underparts dull white, the chin, central throat, and centre of the abdomen pure white, breast washed with greyish; flanks, crissum, and under tail-coverts brownish grey; wing graduated, the first primary rather short, being 0·63 shorter than the second, the second 0·35 shorter than the third, the third only a trifle, say about 0·06, shorter than the fourth and fifth, which are the longest; tail much graduated, and consisting of ten rectrices only; bill brown; iris nut-brown; legs light brown. Total length about 5·25 inches, culmen 0·55, wing 2·35, tail 2·55, tarsus 0·9.

Adult Female (Acarmania). Undistinguishable from the male in plumage.

Young (Smyrna, 28th July). Resembles the adult; but the plumage is laxer, and the upper parts, flanks, and under tail-coverts are much duller in colour.

THIS bird, peculiar amongst our European Warblers in having only ten tail-feathers, is only found in Southern Europe and North Africa, and in Asia as far east as Turkestan.

Owing to a confusion with *Locustella luscinioides*, it was recorded by Temminck as having occurred in Great Britain; but this is not the case, for it does not appear to have ever been met with so far north. It is stated by Professor Barboza du Bocage to occur in Portugal; but he gives no further particulars. In Spain it is found at all seasons of the year, and, judging from the numbers of nests and eggs sent from there, it cannot but be common; and Colonel Irby writes (Orn. Str. Gibr. p. 93) that in Southern Spain "wherever there are thick bushes (generally bramble-brakes close to water) Cetti's Warbler is to be heard. Perhaps many migrate; but at Casa Vieja they are quite as common during the winter months as at any other season, and, somewhat like our own Robin, may be heard singing at all times." Mr. A. von Homeyer met with it at the Prat, in Majorca, but not on Minorca, and states that it is very common in the former locality. It is also to be met with in the south of France, especially in Provence, in the vicinity of streams, and is stated to be numerous in winter in the lower portion of the Camargue. In Lombardy, Venice, and the north of Italy it is merely of accidental occurrence; but in suitable localities in Liguria, Tuscany, and the Campagna it is resident and tolerably numerous. In Sicily it is abundant, and stationary, as also in the island of Sardinia; and Mr. C. Bygrave Wharton informs me that it is "very common in all the swamps on both sides of the island of Corsica." It does not appear to have been met with in Malta; but Captain Sperling records it from Butrinto; and Dr. Krüper says that it is found in all portions of Greece and Macedonia where there is abundance of water, and is even met with in the bush-shaded streamlets in the mountains. It is everywhere a resident, and breeds twice in the year, the first clutch of eggs being deposited late in April. It is also said to be resident in the Cyclades. In Asia Minor it appears also to be common, and resident; and Canon Tristram met with it in Palestine. It appears to be found in North-east Africa; for although Dr. von Heuglin did not bring any specimens from Egypt, he says that he frequently saw it in Lower Egypt, and usually in corn-fields and *Arundo*-thickets; but Captain Shelley did not meet with it there. It is, however, resident and by no means uncommon in North-west Africa. Loche states that it is abundant throughout the year in Algeria. Mr. J. H. Gurney, jun., speaks of it as being found in woods and gardens, but always near a ditch, and says that even in February it may be heard singing from the heart of a bramble-bush; and Mr. Taczanowski states (J. f. O. 1870, p. 46) that he met with it amongst

the reeds on Lake Fezzara, in the desert, in bushes close to the water, and even in the oases at Seggien; and he likewise remarks that it sings throughout the winter. Favier says that it is rare near Tangier, and is seen on passage in February and March, to return in October; but to this Colonel Irby adds that, according to his experience, it is certainly not rare in spring near Tangier in suitable localities.

To the eastward it is found as far as Turkestan. Mr. Blanford gives me the following note respecting its presence in Persia:—"I only shot Cetti's Warbler in the Elburz Mountains, north of Tehrán; it abounded in bushes on the sides of the valleys; and I shot one in a thick jungle on the hill-side far from water. This bird was found by Ménétrés on the Tálísh Mountains, south of Lenkorán, in the hedges around gardens; and it probably occurs in summer at all suitable places on the Persian highlands; for I obtained the nest and eggs in the great marsh at Asupás, north of Shiráz." Mr. A. O. Hume found it tolerably common in tamarisk-swamps in Sindh. Dr. Severtzoff states that it breeds in Turkestan; and he considers that two forms occur there, one of which he calls *Cettia albiventris*, and says it is identical with the bird found in Asia Minor, and with *Cettia stoliczkae*, Hume, which latter he has examined; and the other, which he calls *Cettia scalenura*, is, he informs me, "nothing but a Uralo-Kirghis (a north-eastern) variety of the European Cetti's Warbler." And indeed, after going over my series of specimens with Dr. Severtzoff, I cannot believe in either of these being specifically distinct from our European bird.

Owing chiefly to the unobtrusive and secretive nature of the present species, but comparatively little is recorded respecting its habits. It appears to frequent damp bush-covered localities, swamps, overgrown ditches, and suchlike places; and it is extremely difficult of observation. Canon Tristram, writing on its habits as observed by him in Palestine, says (Ibis, 1867, p. 79), "it seems to prefer the margins of very narrow streams and ditches, so long as they are well fringed with thicket, to larger pieces of swamp; and most tantalizing was it time after time to hear the sudden burst of a resounding song, like the first part of a Nightingale's suddenly cut short, from the centre of some impenetrable tangle of prickly bramble, into which we might pitch stones in vain until we were startled by the same note issuing from the next thicket." Mr. A. von Homeyer (J. f. O. 1862, p. 281) describes it as frequenting in Majorca wet meadows overgrown with *Salicornia* intermixed with tamarisks and *Arundo donax*, in the middle of which there is a freshwater lake about 800 yards long and 150 to 200 yards wide.

The song of Cetti's Warbler is very loud for the size of the bird, but is clear and pleasing. Dr. Hansmann, who publishes (Naumannia, 1857, pp. 409-413) some excellent notes on the present species, gathered from personal observation in Sardinia, describes his first acquaintance with it as follows:—"In the first days of May, when one midday I was coming down the mountain towards the town of Iglesias, and had just turned into a path which led towards the foot of the rocks along a stream whose banks (in some places 20 feet high) were covered with a dense thicket of brambles, wild roses, and other thorny bushes, while on the other side of the path a few scattered laurels were on the otherwise bare hill-side, I suddenly heard issue from one of these a short, loud, hurried song, which reminded me of that of a Chaffinch when, during the breeding-season, it drives another male out of the district it has taken possession of. I at once cocked my gun and slowly approached the bush whence the song proceeded. I was soon close

to it, but could see nothing moving, and waited several minutes, but did not hear the song again; nor did any bird fly out, though I kicked the bush. I was sure I had made no mistake, and withdrew to the path, waiting for some fresh sign of the presence of the bird, when suddenly, scarcely a pace from me, I heard again *zitt, ziwoit, ziwoit*, and a small brown bird slipped out of the thicket and disappeared again at once. This occurred again and again, first from one and then from the other side, but always from just the opposite direction to where I expected it, completely upsetting my calculations." I am indebted to Lord Lilford for the following notes respecting the present species:—"I have found this species in almost all the parts of Southern and Eastern Europe which I have visited, and have devoted a good deal of time and attention to its habits. In Spain it is a common bird, in New Castile, especially in the neighbourhood of Madrid, in the grounds of the Casa de Campo, and el Pardo, in the former of which localities I had a narrow escape of bagging a very different species of biped whilst watching a pair of these interesting little birds, as recorded in 'The Ibis.' I always found this Warbler in the close vicinity of water, though by no means invariably in marshy ground; in fact I have frequently seen and heard it amongst the tamarisks, brambles, &c. which fringe the stony torrents of Northern Italy. Very abundant on the banks of the Guadalquivir, where I believe it to be a permanent resident; at all events, I have met with it in that locality from the middle of February till the beginning of June. Common in the island of Sardinia, my experience there differing from that of Count Salvadori, who says that he did not meet with it on the banks of the lagoons or in marshes (Fauna d'Italia, Uccelli, p. 118), in which spots I have often met with it, as well as on the banks of running streams, as recorded by him *loc. supr. cit.* In Corsica I found it common in the marshes near Bastia, in January 1875; and in Sicily it is very abundant in the marshes of the eastern coast. In Corfu it occurs in April, but is not very abundant; on the opposite mainland of Epirus I have met with it plentifully at all seasons of the year. I found it in March near Suda Bay, in Crete; and it was common in those parts of Cyprus which we visited in April and May 1875. I can add nothing to the excellent account of the habits of this species by Colonel Irby in his recent work on the ornithology of the Straits of Gibraltar, which exactly tallies with my own observations. As I write I have before me five nests of this species taken near Malaga in the latter part of May and the first week of June 1874, three of which contained four, and the others three eggs respectively: all the nests agree pretty closely with Colonel Irby's description *loc. supr. cit.*; but in the very few instances in which I have myself found the nests of this bird, they were on or very close to the ground; and in the instance mentioned, in the Casa-de-Campo grounds, near Madrid, dead leaves entered largely into the outside framework of the nest. The note of Cetti's Warbler is quite unmistakable, and when once heard not easily forgotten. I have no knowledge of music, and will, therefore, not attempt to describe or imitate the thrill in letters." Mr. Seebohm also, who has met with the present species in Greece and Asia Minor, sends me the following notes, viz.:—"Cetti's Warbler is by no means uncommon both in Greece and Asia Minor. It is an extremely shy bird, frequenting the thickest underwood, and is rarely seen during the the day-time; but its song is so loud and rich that there is no danger of its being overlooked. At Nymphion, east of Smyrna, this bird was very partial to the cherry-orchards near the village. The stream coming down from the mountains is diverted from its course into an elaborate

system of artificial irrigation; and the little streamlets are bordered by thick hedges, the branches meeting over the water. These hedges were a very favourite resort of Cetti's Warbler. In Greece this bird was equally partial to the patches of cultivated land surrounding the villages, and ascended the valleys of the Parnassus to an elevation of at least 3500 feet, almost to the pine-region. In its habits it reminded me very much of our Grasshopper-Warbler. The only time when I could get an opportunity of seeing it was early in the morning, soon after sunrise. It was then intent upon feeding, and not so shy. It was extremely active, even more active than a Titmouse. It would run up a branch of a shrub to its extreme end, then drop into the heart of the shrub, and run up another branch. The song is very loud and almost startling in the suddenness of its commencement. It always begins with a rich loud *spritz*, a sort of preliminary trumpet-blast; then follow three or four rapid double notes, something like *chit'-up, chit'-up, chit'-up*, but clear and full as the notes of a cornopean. Your first impression is that, if the bird goes on as it has begun, it will beat the Nightingale hollow; but, alas! the song is over. These five or seven notes are repeated at intervals without variation. Cetti's Warbler has a superb voice, but no genius for music. Like the Nightingale, this bird sings in the night; and I have often heard it as I lay on my camp-bed in a peasant's house, far away up the Parnassus, before it was light enough to see the chinks in the walls or the holes in the roof."

Colonel Irby, who has had ample opportunities of examining nests of the present species *in situ*, says (*l. c.*) that "the nest is always placed at some distance from the ground, generally at a height of about two or three feet, and is either situated in a thick bush, or, when in a bushy swamp, constructed somewhat like the nest of the Reed-Warbler, on the stalks of reeds and *Epilobium*. These nests are built of bits of small sedges intermingled with willow-cotton, and chiefly lined outside with strips of the stems of the *Epilobium*, inside with fine grass, a few hairs, and bits of cotton at the top. Those nests built in bushes are chiefly constructed with grass and cotton, and are entirely lined with hair. All the nests are deep and cup-shaped, largest at the base, measuring about $4\frac{1}{2}$ inches in height, the inside depth being $2\frac{1}{4}$ inches, the internal diameter $2\frac{3}{4}$ inches. The birds are rather irregular as to the time of nesting, as I have seen nests with eggs nearly on the point of hatching, and others with fresh eggs on the same day (13th of May)." I possess several clutches of the eggs of this Warbler, some of which are bright brick-red, and others dull red with a pinkish tinge, all uniform in colour. In size they average about $\frac{3.0}{4.0}$ by $\frac{2.2}{4.0}$ inch.

I am indebted to the authorities at Cambridge for an opportunity of critically examining and comparing Swainson's type of *Bradypterus platyurus*, this specimen being the bird on which he founded his genus *Bradypterus*; and there is not a shadow of doubt that it is nothing but Cetti's Warbler; but I may add that I think there is some doubt as to whether it really was obtained in Africa as stated on the label. Swainson, *l. c.* p. 241, misspelt the generic term *Bradyptetus*; but this error is corrected in the index, at p. 379, where it is correctly spelt *Bradypterus*. Swainson in error identifies his bird with Levaillant's *Pavaneur*, which is a bird both generically and specifically distinct. I have also examined Canon Tristram's type of *Cettia orientalis*, which certainly is not specifically separable from the ordinary European form; for it does not differ in coloration, and measures—culmen 0.55, wing 2.45, tail 2.15, tarsus 0.9. In

the specimens in my collection I find a considerable variation in size, chiefly in the length of the bill and wing. One from Spain, a female, measures—wing 2·18, culmen 0·48; two from Corsica, wing 2·05 and 2·25, culmen 0·5 and 0·52; one from Algiers, wing 2·46, culmen 0·55; three from Greece, all males, wing 2·4, 2·4, and 2·6, culmen 0·5, 0·55, 0·55; two males from Asia Minor, wing 2·2 and 2·48, culmen 0·51 and 0·55; and two from Persia, in the collection of Mr. Blanford, measure—wing 2·3 and 2·35, culmen 0·5 and 0·54.

The specimen figured is the one above described.

In the preparation of the above article I have examined the following specimens:—

E Mus. H. E. Dresser.

a, ♀. Aranjuez, April 28th, 1865 (*Lilford*). *b*, *c*, ♂. Corsica, January 7th, 1875 (*C. Bygrave Wharton*). *d*, ♂. Olympus, November 29th, 1869. *e*, ♂. Acarnania, November 28th, 1868 (*Krüper*). *f*, ♂. Acarnania, December 2nd, 1868 (*Krüper*). *g*. Blidah, Algiers, February 14th, 1870 (*J. H. Gurney*). *h*, ♂. Smyrna, Asia Minor, July 28th, 1871 (*Krüper*). *i*, ♂. Adalia, December 18th, 1874 (*C. G. Danford*).

E Mus. Ind. Calc.

a, ♂, *b*, ♀. Karij valley, north of Tehrân, Persia. *c*. Mazandaran, North Persia (*W. Blanford*).

E Mus. H. B. Tristram.

a, ♂. Aranjuez, Spain, April 28th, 1865 (*Lord Lilford*). *b*. Europe. *c*. Blida, Algeria, February 16th, 1870 (*J. H. Gurney, jun.*). *d*, ♂. Merom, May 14th, 1864 (*H. B. T.*, type of *Cettia orientalis*).

